

PROJECT MANUAL

FOR

BRANDYWINE SCHOOL DISTRICT

**BRANDYWINE HIGH SCHOOL
RENOVATIONS PHASE 1 - GENERAL TRADES PACKAGE**

BRANDYWINE SCHOOL DISTRICT
1311 BRANDYWINE BOULEVARD
WILMINGTON, DELAWARE 19809

OWNER

ABHA ARCHITECTS
1621 N. LINCOLN STREET
WILMINGTON, DELAWARE 19806
(302) 658-6426

ARCHITECTS

VANDEMARK & LYNCH, INC.
4305 MILLER ROAD
WILMINGTON, DE 19802
(302) 764-7635

CIVIL ENGINEERS

BAKER INGRAM & ASSOCIATES
366 E. MAIN STREET
NEWARK, DE 19711
(302) 456-1757

STRUCTURAL ENGINEERS

FURLOW ASSOCIATES, INC.
1206 SOCIETY DRIVE
CLAYMONT, DELAWARE 19703
(302) 798-3515

**MECHANICAL/ELECTRICAL
ENGINEERS**

ABHA PROJECT NUMBER: 1629

DATE: MAY 10, 2018



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SECTION 00 1150
ADVERTISEMENT FOR BIDS

Sealed bids for Brandywine High School Renovations Phase 1 - General Trades Package, will be received by the Brandywine School District in The Gymnasium Lobby at Brandywine High School, 1400 Foulk Road, Wilmington, DE 19803 until 2:00 **PM local time on Wednesday, June 6, 2018**, at which time they will be publicly opened and read aloud. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

Sealed bids shall be addressed to Carol Riddle. The outer envelope should clearly indicate: "SEALED BID - DO NOT OPEN."

Project involves selective demolition, single-ply membrane roofing, solid phenolic rainscreen, gypsum board/plaster assemblies, exterior cementitious stucco, lighting, mechanical equipment screen walls/fencing, fire protections, painting, doors, frames, and hardware.

Attention is called to construction schedule information as detailed in the Bid Documents.

A MANDATORY Pre-Bid Meeting will be held at 2:00 **PM on Tuesday, May 22, 2018**, in The Gymnasium Lobby at the Brandywine High School (address above) for the purpose of establishing the listing of subcontractors and to answer questions. Please provide a business card with your contact information.

Bid documents may be viewed and downloaded at ABHA's dropbox link on or after **May 18, 2018**. Bidders may request dropbox link by emailing their company name, contact name, email address, phone number and mailing address to ssweetman@abha.com. Bid documents may be examined at the offices of ABHA Architects, 1621 N Lincoln St, Wilmington DE 19806 or at the State of Delaware Online Bid Solicitation Directory at <https://bids.delaware.gov>. Email questions to David Barisa at DBarisa@abha.com.

Each bid must be accompanied by a bid security equivalent to ten percent (10%) of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent (100%) of the contract price upon execution of the contract.

The Owner reserves the right to reject any or all bids and to waive any informalities therein. The Owner may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

Pursuant to the Office of Management and Budget (OMB) "4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects" requires that Contractors and Subcontractors who work on Large Public Works Contracts funded all or in part with public funds implement a Mandatory Drug Testing Program. The regulation can be downloaded from the following website:

<http://regulations.delaware.gov/AdminCode/title19/4000/4100/index.shtml#TopOfPage>
<<http://regulations.delaware.gov/AdminCode/title19/4000/4100/index.shtml>>

END OF SECTION

SECTION 00 2110
INSTRUCTIONS TO BIDDERS

TABLE OF ARTICLES

1.01 ARTICLE 1:GENERAL

A. DEFINITIONS

1. Whenever the following terms are used, their intent and meaning shall be interpreted as follows:

STATE: The State of Delaware.

AGENCY: Contracting State Agency as noted on cover sheet.

DESIGNATED OFFICIAL: The agent authorized to act for the Agency.

ARCHITECT:

ABHA Architects, Inc.

1621 N. Lincoln Street

Wilmington, DE 19806

BIDDING DOCUMENTS: Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement for Bid, Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the Bid Form (including the Non-collusion Statement), and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, as well as the Drawings, Specifications (Project Manual) and all Addenda issued prior to execution of the Contract.

CONTRACT DOCUMENTS: The Contract Documents consist of the, Instructions to Bidders, Supplementary Instructions to Bidders (if any), General Conditions, Supplementary General Conditions, General Requirements, Special Provisions (if any), the form of agreement between the Owner and the Contractor, Drawings (if any), Specifications (Project Manual), and all addenda.

AGREEMENT: The form of the Agreement shall be AIA Document A101, Standard Form of Agreement between Owner and Contractor where the basis of payment is a STIPULATED SUM. In the case of conflict between the instructions contained therein and the General Requirements herein, these General Requirements shall prevail.

GENERAL REQUIREMENTS (or CONDITIONS): General Requirements (or conditions) are instructions pertaining to the Bidding Documents and to contracts in general. They contain, in summary, requirements of laws of the State; policies of the Agency and instructions to bidders.

SPECIAL PROVISIONS: Special Provisions are specific conditions or requirements peculiar to the bidding documents and to the contract under consideration and are supplemental to the General Requirements. Should the Special Provisions conflict with the General Requirements, the Special Provisions shall prevail.

ADDENDA: Written or graphic instruments issued by the Owner/Architect prior to the execution of the contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

BIDDER OR VENDOR: A person or entity who formally submits a Bid for the material or Work contemplated, acting directly or through a duly authorized representative who meets the requirements set forth in the Bidding Documents.

SUB-BIDDER: A person or entity who submits a Bid to a Bidder for materials or labor, or both for a portion of the Work.

BID: A complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

BASE BID: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids (if any are required to be stated in the bid).

ALTERNATE BID (or ALTERNATE): An amount stated in the Bid, where applicable, to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.

UNIT PRICE: An amount stated in the Bid, where applicable, as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

SURETY: The corporate body which is bound with and for the Contract, or which is liable, and which engages to be responsible for the Contractor's payments of all debts pertaining to and for his acceptable performance of the Work for which he has contracted.

BIDDER'S DEPOSIT: The security designated in the Bid to be furnished by the Bidder as a guaranty of good faith to enter into a contract with the Agency if the Work to be performed or the material or equipment to be furnished is awarded to him.

CONTRACT: The written agreement covering the furnishing and delivery of material or work to be performed.

CONTRACTOR: Any individual, firm or corporation with whom a contract is made by the Agency.

SUBCONTRACTOR: An individual, partnership or corporation which has a direct contract with a contractor to furnish labor and materials at the job site, or to perform construction labor and furnish material in connection with such labor at the job site.

CONTRACT BOND: The approved form of security furnished by the contractor and his surety as a guaranty of good faith on the part of the contractor to execute the work in accordance with the terms of the contract.

1.02 ARTICLE 2: BIDDER'S REPRESENTATIONS

A. MANDATORY PRE-BID MEETING

1. A pre-bid meeting for this project will be held at the time and place designated. Attendance at this meeting is a pre-requisite for submitting a Bid, unless this requirement is specifically waived elsewhere in the Bid Documents.
2. By submitting a Bid, the Bidder represents that:
3. The Bidder has read and understands the Bidding Documents and that the Bid is made in accordance therewith.
4. The Bidder has visited the site, become familiar with existing conditions under which the Work is to be performed, and has correlated the Bidder's his personal observations with the requirements of the proposed Contract Documents.
5. The Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception.

B. JOINT VENTURE REQUIREMENTS

1. For Public Works Contracts, each Joint Venturer shall be qualified and capable to complete the Work with their own forces.

2. Included with the Bid submission, and as a requirement to bid, a copy of the executed Joint Venture Agreement shall be submitted and signed by all Joint Venturers involved.
3. All required Bid Bonds, Performance Bonds, Material and Labor Payment Bonds must be executed by both Joint Venturers and be placed in both of their names.
4. All required insurance certificates shall name both Joint Venturers.
5. Both Joint Venturers shall sign the Bid Form and shall submit a copy of a valid Delaware Business License with their Bid.
6. Both Joint Venturers shall include their Federal E.I. Number with the Bid.
7. In the event of a mandatory Pre-bid Meeting, each Joint Venturer shall have a representative in attendance.
8. Due to exceptional circumstances and for good cause shown, one or more of these provisions may be waived at the discretion of the State.

C. ASSIGNMENT OF ANTITRUST CLAIMS

1. As consideration for the award and execution by the Owner of this contract, the Contractor hereby grants, conveys, sells, assigns and transfers to the State of Delaware all of its right, title and interests in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Owner pursuant to this contract.

1.03 ARTICLE 3: BIDDING DOCUMENTS

A. COPIES OF BID DOCUMENTS

1. Refer to Advertisement (or Invitation) for Bids for information concerning locations where Bidding Documents may be seen or obtained and under what conditions. Deposits for documents are non-refundable.
2. Bidders shall use complete sets of Bidding Documents for preparation of Bids. The issuing Agency nor the Architect assumes no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
3. Any errors, inconsistencies or omissions discovered shall be reported to the Architect immediately.
4. The Agency and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

B. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

1. The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall report any errors, inconsistencies, or ambiguities discovered to the Architect.
2. Bidders or Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request to the Architect at least seven days prior to the date for receipt of Bids. Interpretations, corrections and changes to the Bidding Documents will be made by written Addendum. Interpretations, corrections, or changes to the Bidding Documents made in any other manner shall not be binding.
3. The apparent silence of the specifications as to any detail, or the apparent omission from it of detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and only material and workmanship of the first

quality are to be used. Proof of specification compliance will be the responsibility of the Bidder.

4. Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for all permits, labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for the proper execution and completion of the Work.
5. The Owner will bear the costs for all impact and user fees associated with the project.

C. SUBSTITUTIONS

1. The materials, products and equipment described in the Bidding Documents establish a standard of quality, required function, dimension, and appearance to be met by any proposed substitution. The specification of a particular manufacturer or model number is not intended to be proprietary in any way. Substitutions of products for those named will be considered, providing that the Bidder certifies that the function, quality, and performance characteristics of the material offered is equal or superior to that specified. It shall be the Bidder's responsibility to assure that the proposed substitution will not affect the intent of the design, and to make any installation modifications required to accommodate the substitution.
2. Requests for substitutions shall be made in writing to the Architect at least ten days prior to the date of the Bid Opening. Such requests shall include a complete description of the proposed substitution, drawings, performance and test data, explanation of required installation modifications due the substitution, and any other information necessary for an evaluation. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval shall be final. The Architect is to notify Owner prior to any approvals.
3. If the Architect approves a substitution prior to the receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding.
4. The Architect shall have no obligation to consider any substitutions after the Contract award.

D. ADDENDA

1. Addenda will be mailed or delivered to all who are known by the Architect to have received a complete set of the Bidding Documents.
2. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
3. No Addenda will be issued later than 4 days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which extends the time or changes the location for the opening of bids.
4. Each bidder shall ascertain prior to submitting his Bid that they have received all Addenda issued, and shall acknowledge their receipt in their Bid in the appropriate space. Not acknowledging an issued Addenda could be grounds for determining a bid to be non-responsive.

1.04 ARTICLE 4: BIDDING PROCEDURES

A. PREPARATION OF BIDS

1. Submit the bids on the Bid Forms included with the Bidding Documents.
2. Submit the original Bid Form for each bid. Bid Forms may be removed from the project manual for this purpose.
3. Execute all blanks on the Bid Form in a non-erasable medium (typewriter or manually in ink).

4. Where so indicated by the makeup on the Bid Form, express sums in both words and figures, in case of discrepancy between the two, the written amount shall govern.
5. Interlineations, alterations or erasures must be initialed by the signer of the Bid.
6. BID ALL REQUESTED ALTERNATES AND UNIT PRICES, IF ANY. If there is no change in the Base Bid for an Alternate, enter "No Change". The Contractor is responsible for verifying that they have received all addenda issued during the bidding period. Work required by Addenda shall automatically become part of the Contract.
7. Make no additional stipulations on the Bid Form and do not qualify the Bid in any other manner.
8. Each copy of the Bid shall include the legal name of the Bidder and a statement whether the Bidder is a sole proprietor, a partnership, a corporation, or any legal entity, and each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current Power of Attorney attached, certifying agent's authority to bind the Bidder.
9. Bidder shall complete the Non-Collusion Statement form included with the Bid Forms and include it with their Bid.
10. In the construction of all Public Works projects for the State of Delaware or any agency thereof, preference in employment of laborers, workers or mechanics shall be given to bona fide legal citizens of the State who have established citizenship by residence of at least 90 days in the State.
11. Each bidder shall include in their bid a copy of a valid Delaware Business License.
12. Each bidder shall include signed Affidavit(s) for the Bidder and each listed Subcontractor certifying compliance with OMB Regulation 4104- "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects." "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

B. BID SECURITY

1. All bids shall be accompanied by a deposit of either a good and sufficient bond to the agency for the benefit of the agency, with corporate surety authorized to do business in this State, the form of the bond and the surety to be approved by the agency, or a security of the bidder assigned to the agency, for a sum equal to at least 10% of the bid plus all add alternates, or in lieu of the bid bond a security deposit in the form of a certified check, bank treasurer's check, cashier's check, money order, or other prior approved secured deposit assigned to the State. The bid bond need not be for a specific sum, but may be stated to be for a sum equal to 10% of the bid plus all add alternates to which it relates and not to exceed a certain stated sum, if said sum is equal to at least 10% of the bid. The Bid Bond form used shall be the standard OMB form (attached).
2. The Agency has the right to retain the bid security of Bidders to whom an award is being considered until either a formal contract has been executed and bonds have been furnished or the specified time has elapsed so the Bids may be withdrawn or all Bids have been rejected.
3. In the event of any successful Bidder refusing or neglecting to execute a formal contract and bond within 20 days of the awarding of the contract, the bid bond or security deposited by the successful bidder shall be forfeited.

C. SUBCONTRACTOR LIST

1. As required by Delaware Code, Title 29, section 6962(d)(10)b, each Bidder shall submit with their Bid a completed List of Sub-Contractors included with the Bid Form. NAME

ONLY ONE SUBCONTRACTOR FOR EACH TRADE. A Bid will be considered non-responsive unless the completed list is included.

2. Provide the Name and Address for each listed subcontractor. Addresses by City, Town or Locality, plus State, will be acceptable.
3. It is the responsibility of the Contractor to ensure that their Subcontractors are in compliance with the provisions of this law. Also, if a Contractor elects to list themselves as a Subcontractor for any category, they must specifically name themselves on the Bid Form and be able to document their capability to act as Subcontractor in that category in accordance with this law.

D. EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

1. During the performance of this contract, the contractor agrees as follows:
 - a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take affirmative action to ensure the applicants are employed, and that employees are treated during employment, without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
 - b. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin.

E. PREVAILING WAGE REQUIREMENT

1. Wage Provisions: For renovation and new construction projects whose costs exceed the thresholds contained in Delaware Code, Title 29, Section 6960, the minimum wage rates for various classes of laborers and mechanics shall be as determined by the Department of Labor, Division of Industrial Affairs of the State of Delaware
2. The employer shall pay all mechanics and labors employed directly upon the site of work, unconditionally and not less often than once a week and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the specifications, regardless of any contractual relationship which may be alleged to exist between the employer and such laborers and mechanics.
3. The scale of the wages to be paid shall be posted by the employer in a prominent and easily accessible place at the site of the work.
4. Every contract based upon these specifications shall contain a stipulation that sworn payroll information, as required by the Department of Labor, be furnished weekly. The Department of Labor shall keep and maintain the sworn payroll information for a period of 6 months from the last day of the work week covered by the payroll.
5. Wage Rates applicable to this project are attached at the end of this section.

F. SUBMISSION OF BIDS

1. Enclose the Bid, the Bid Security, and any other documents required to be submitted with the Bid in a sealed opaque envelope. Address the envelope to the party receiving the

Bids. Identify with the project name, project number, and the Bidder's name and address. If the Bid is sent by mail, enclose the sealed envelope in a separate mailing envelope with the notation "BID ENCLOSED" on the face thereof. The State is not responsible for the opening of bids prior to bid opening date and time that are not properly marked.

2. Deposit Bids at the designated location prior to the time and date for receipt of bids indicated in the Advertisement for Bids. Bids received after the time and date for receipt of bids will be marked "LATE BID" and returned.
3. Bidder assumes full responsibility for timely delivery at location designated for receipt of bids.
4. Oral, telephonic or telegraphic bids are invalid and will not receive consideration.
5. Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids, provided that they are then fully in compliance with these Instructions to Bidders.

G. MODIFICATION OR WITHDRAW OF BIDS

1. Prior to the closing date for receipt of Bids, a Bidder may withdraw a Bid by personal request and by showing proper identification to the Architect. A request for withdraw by letter or fax, if the Architect is notified in writing prior to receipt of fax, is acceptable. A fax directing a modification in the bid price will render the Bid informal, causing it to be ineligible for consideration of award. Telephone directives for modification of the bid price shall not be permitted and will have no bearing on the submitted proposal in any manner.
2. Bidders submitting Bids that are late shall be notified as soon as practicable and the bid shall be returned.
3. A Bid may not be modified, withdrawn or canceled by the Bidder during a thirty (30) day period following the time and date designated for the receipt and opening of Bids, and Bidder so agrees in submitting their Bid. Bids shall be binding for 30 days after the date of the Bid opening.

1.05 ARTICLE 5: CONSIDERATION OF BIDS

A. OPENING/REJECTION OF BIDS

1. Unless otherwise stated, Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids will be made available to Bidders.
2. The Agency shall have the right to reject any and all Bids. A Bid not accompanied by a required Bid Security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.
3. If the Bids are rejected, it will be done within thirty (30) calendar day of the Bid opening.

B. COMPARISON OF BIDS

1. After the Bids have been opened and read, the bid prices will be compared and the result of such comparisons will be made available to the public. Comparisons of the Bids may be based on the Base Bid plus desired Alternates. The Agency shall have the right to accept Alternates in any order or combination.
2. The Agency reserves the right to waive technicalities, to reject any or all Bids, or any portion thereof, to advertise for new Bids, to proceed to do the Work otherwise, or to abandon the Work, if in the judgment of the Agency or its agent(s), it is in the best interest of the State.
3. An increase or decrease in the quantity for any item is not sufficient grounds for an increase or decrease in the Unit Price.
4. The prices quoted are to be those for which the material will be furnished F.O.B. Job Site and include all charges that may be imposed during the period of the Contract.

5. No qualifying letter or statements in or attached to the Bid, or separate discounts will be considered in determining the low Bid except as may be otherwise herein noted. Cash or separate discounts should be computed and incorporated into Unit Bid Price(s).

C. DISQUALIFICATION OF BIDDERS

1. An agency shall determine that each Bidder on any Public Works Contract is responsible before awarding the Contract. Factors to be considered in determining the responsibility of a Bidder include:
 - a. The Bidder's financial, physical, personnel or other resources including Subcontracts;
 - b. The Bidder's record of performance on past public or private construction projects, including, but not limited to, defaults and/or final adjudication or admission of violations of the Prevailing Wage Laws in Delaware or any other state;
 - c. The Bidder's written safety plan;
 - d. Whether the Bidder is qualified legally to contract with the State;
 - e. Whether the Bidder supplied all necessary information concerning its responsibility; and,
 - f. Any other specific criteria for a particular procurement, which an agency may establish; provided however, that, the criteria be set forth in the Invitation to Bid and is otherwise in conformity with State and/or Federal law.
2. If an agency determines that a Bidder is nonresponsive and/or nonresponsible, the determination shall be in writing and set forth the basis for the determination. A copy of the determination shall be sent to the affected Bidder within five (5) working days of said determination.
3. In addition, any one or more of the following causes may be considered as sufficient for the disqualification of a Bidder and the rejection of their Bid or Bids.
 - a. More than one Bid for the same Contract from an individual, firm or corporation under the same or different names.
 - b. Evidence of collusion among Bidders.
 - c. Unsatisfactory performance record as evidenced by past experience.
 - d. If the Unit Prices are obviously unbalanced either in excess or below reasonable cost analysis values.
 - e. If there are any unauthorized additions, interlineation, conditional or alternate bids or irregularities of any kind which may tend to make the Bid incomplete, indefinite or ambiguous as to its meaning.
 - f. If the Bid is not accompanied by the required Bid Security and other data required by the Bidding Documents.
 - g. If any exceptions or qualifications of the Bid are noted on the Bid Form.

D. ACCEPTANCE OF BID AND AWARD OF CONTRACT

1. A formal Contract shall be executed with the successful Bidder within twenty (20) calendar days after the award of the Contract.
2. Per Section 6962(d)(13) a., Title 29, Delaware Code, "The contracting agency shall award any public works contract within thirty (30) days of the bid opening to the lowest responsive and responsible Bidder, unless the Agency elects to award on the basis of best value, in which case the election to award on the basis of best value shall be stated in the Invitation To Bid."

3. Each Bid on any Public Works Contract must be deemed responsive by the Agency to be considered for award. A responsive Bid shall conform in all material respects to the requirements and criteria set forth in the Contract Documents and specifications.
4. The Agency shall have the right to accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid, plus accepted Alternates.
5. The successful Bidder shall execute a formal contract, submit the required Insurance Certificate, and furnish good and sufficient bonds, unless specifically waived in the General Requirements, in accordance with the General Requirement, within twenty (20) days of official notice of contract award. The successful Bidder shall provide two business days prior to contract execution, copies of the Employee Drug Testing Program for the Bidder and all listed Subcontractors. Bonds shall be for the benefit of the Agency with surety in the amount of 100% of the total contract award. Said Bonds shall be conditioned upon the faithful performance of the contract. Bonds shall remain in affect for period of one year after the date of substantial completion.
6. If the successful Bidder fails to execute the required Contract, Bond, and all required information as aforesaid, within twenty (20) calendar days after the date of official Notice of the Award of the Contract, their Bid guaranty shall immediately be taken and become the property of the State for the benefit of the Agency as liquidated damages, and not as a forfeiture or as a penalty. Award will then be made to the next lowest qualified Bidder of the Work or readvertised, as the Agency may decide.
7. Each bidder shall supply with its bid its taxpayer identification number (i.e., federal employer identification number or social security number) and a copy of its Delaware business license, and should the vendor be awarded a contract, such vendor shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.
8. The Bid Security shall be returned to the successful Bidder upon the execution of the formal contract. The Bid Securities of unsuccessful bidders shall be returned within thirty (30) calendar days after the opening of the Bids.

1.06 ARTICLE 6: POST-BID INFORMATION

A. CONTRACTOR'S QUALIFICATION STATEMENT

1. Bidders to whom award of a Contract is under consideration shall, if requested by the Agency, submit a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a statement has been previously required and submitted.

B. BUSINESS DESIGNATION FORM

1. Successful bidder shall be required to accurately complete an Office of Management and Budget Business Designation Form for Subcontractors.

1.07 ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

A. BOND REQUIREMENTS

1. The cost of furnishing the required Bonds, that are stipulated in the Bidding Documents, shall be included in the Bid.
2. If the Bidder is required by the Agency to secure a bond from other than the Bidder's usual sources, changes in cost will be adjusted as provide in the Contract Documents.
3. The Performance and Payment Bond forms used shall be the standard OMB forms (attached).

B. TIME OF DELIVERY AND FORM OF BONDS

1. The bonds shall be dated on or after the date of the Contract.
2. The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix a certified and current copy of the power of attorney.

1.08 ARTICLE 8: FORM OF AGREEMENT BETWEEN AGENCY AND CONTRACTOR

- A. Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment is a Stipulated Sum.

END OF INSTRUCTIONS TO BIDDERS

STATE OF DELAWARE
DEPARTMENT OF LABOR
DIVISION OF INDUSTRIAL AFFAIRS
OFFICE OF LABOR LAW ENFORCEMENT
PHONE: 302 761 8200

Mailing Address:

4425 North Market St., 3rd Fl
Wilmington, DE 19802

Located at: _____

4425 North Market St., 3rd Fl
Wilmington, DE 19802

PREVAILING WAGES FOR BUILDING CONSTRUCTION EFFECTIVE MARCH 15, 2018

CLASSIFICATION	NEW CASTLE	KENT	SUSSEX
ASBESTOS WORKERS	23.35	28.76	41.85
BOILERMAKERS	69.90	35.46	52.14
BRICKLAYERS	53.89	53.89	53.89
CARPENTERS	54.81	54.81	43.57
CEMENT FINISHERS	73.74	51.37	22.64
ELECTRICAL LINE WORKERS	46.44	39.82	30.36
ELECTRICIANS	68.70	68.70	68.70
ELEVATOR CONSTRUCTORS	93.23	65.86	32.62
GLAZIERS	73.10	73.10	57.87
INSULATORS	56.53	56.53	56.53
IRON WORKERS	63.70	63.70	63.70
LABORERS	46.20	46.20	46.20
MILLWRIGHTS	71.60	71.60	57.70
PAINTERS	51.55	51.55	51.55
PILEDRIVERS	76.77	40.19	32.51
PLASTERERS	30.48	30.48	22.59
PLUMBERS/PIPEFITTERS/STEAMFITTERS	70.05	53.97	58.81
POWER EQUIPMENT OPERATORS	69.29	69.29	64.96
ROOFERS-COMPOSITION	24.52	24.20	22.10
ROOFERS-SHINGLE/SLATE/TILE	18.78	22.33	17.56
SHEET METAL WORKERS	68.53	68.53	68.53
SOFT FLOOR LAYERS	52.52	52.52	52.52
SPRINKLER FITTERS	59.49	59.49	59.49
TERRAZZO/MARBLE/TILE FNRS	61.93	61.93	48.52
TERRAZZO/MARBLE/TILE STRS	68.52	68.52	56.19
TRUCK DRIVERS	29.36	28.02	21.39

CERTIFIED: 04/06/2018

BY: [Signature]

ADMINISTRATOR, OFFICE OF LABOR LAW ENFORCEMENT

NOTE: THESE RATES ARE PROMULGATED AND ENFORCED PURSUANT TO THE PREVAILING WAGE REGULATIONS ADOPTED BY THE DEPARTMENT OF LABOR ON APRIL 3, 1992.

CLASSIFICATIONS OF WORKERS ARE DETERMINED BY THE DEPARTMENT OF LABOR. FOR ASSISTANCE IN CLASSIFYING WORKERS, OR FOR A COPY OF THE REGULATIONS OR CLASSIFICATIONS, PHONE 302 761 8200

NON-REGISTERED APPRENTICES MUST BE PAID THE MECHANIC'S RATE.

PROJECT: Brandywine High School, New Castle County

SECTION 00 4113

BID FORM

**BRANDYWINE SCHOOL DISTRICT CONTRACT NUMBER:
BSD18017-GENERAL_TRADES-BHS**

FOR BIDS DUE: _____

TO: BRANDYWINE SCHOOL DISTRICT 1311 BRANDYWINE BLVD. WILMINGTON, DE. 19809	FOR: BRANDYWINE HIGH SCHOOL RENOVATIONS PHASE 1 GENERAL TRADES PACKAGE 3401 GREEN ST. CLAYMONT, DE. 19703
---	---

FOR CONTRACT: GENERAL CONSTRUCTION

NAME OF BIDDER: _____

DELAWARE BUSINESS LICENSE NO.: _____

(A copy of Bidder's Delaware Business License must be attached to this form.)

TAXPAYER ID NO.: _____

(OTHER LICENSE NOS.): _____

PHONE NO.: () _____ FAX NO.: () _____

EMAIL ADDRESS: _____

The undersigned, representing that he has read and understands the Bidding Documents, including the complete Project Manual and the Drawings as listed in the Table of Contents, all dated May 18, 2018, and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

BASE BID:

(expressed in words)

(\$ _____)
(expressed in figures)

BID FORM

ALTERNATES

Alternate prices conform to applicable project specification section. Refer to specifications for a complete description of the following Alternates. An “ADD” or “DEDUCT” amount is indicated by the crossed out part that does not apply.

ALTERNATE NO. 1: CHILLER ACCOUSTIC WALL / FENCE ENCLOSURE.

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in figures)

ALTERNATE NO. 2: SECOND FLOOR CORRIDOR DOORS

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in figures)

ALTERNATE NO. 3: COURTYARD - DEMOLITION

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in figures)

1.

ALTERNATE NO. 4: COURTYARD - NEW CONSTRUCTION (CONCRETE).

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in words)

ALTERNATE NO. 4A: COURTYARD - NEW CONSTRUCTION (PAVERS)

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in words)

ALTERNATE NO. 5: ROOFING AT THEATER STAGE AND SUPPORT SPACES.

Add/Deduct: _____
(expressed in words)

(\$ _____)
(expressed in words)

UNIT PRICES

Unit prices conform to applicable project specification project. The difference between Add or Deduct Unit Prices of the same item may not exceed 15%. Refer to the specifications for a complete description of the following Unit Prices:

PRICE PER SQUARE FOOT

Add: _____

UNIT PRICE NO. 1: EXTERIOR STUCCO SOFFIT REPAIR

Price per square foot

Add: _____

UNIT PRICE NO. 2: INTERIOR GYPSUM BASED PLASTER REPAIR

Price per square foot

Add: _____

UNIT PRICE 3: GYPSUM WALL BOARD REPAIR

Price per square foot

Add: _____

BID FORM

SIGNATURE FORM

I / We acknowledge Addendas Numbered _____ and the price(s) submitted include any cost / schedule impact they may have.

This bid shall remain valid and cannot be withdrawn for 30 days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within 90 calendar days of the Notice to Proceed.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By: _____ Trading as: _____

(Individual's / General Partner's / Corporate Name)

(State of Corporation)

Business Address: _____

Witness: _____ By: _____

(Authorized Signature)

(SEAL)

(Title)

Date: _____

Attachments:

Sub-Contractor List.

Non-Collusion Statement.

Affidavit(s) of Employee Drug Testing Program

Bid Security.

BID FORM
SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor must be listed for each category where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the Owner, it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work. This form must be filled out completely with no additions or deletions. Note that all subcontractors listed below must have a signed Affidavit of Employee Drug Testing Program included with this bid.

SUBCONTRACTOR CATEGORY	SUBCONTRACTOR	ADDRESS (City & State)	SUBCONTRACTOR Taxpayer ID # or DE Business License #
Sitework			
Concrete			
Masonry			
Steel			
Roofing			
Stucco			
Plaster/Gypsum Board			
Phenolic Panels			
Doors/Frames/ Hardware			
Mechanical			
Fire Protection			
Plumbing			
Electrical			

BID FORM
NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date.

All the terms and conditions of this Contract have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE

(TYPED): _____

AUTHORIZED REPRESENTATIVE

(SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____, 20__

My Commission expires : _____ NOTARY PUBLIC _____

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

BID FORM
EMPLOYEE DRUG TESTING PROGRAM

4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

CONTRACTOR/SUBCONTRACTOR

NAME: _____

CONTRACTOR/SUBCONTRACTOR

ADDRESS: _____

AUTHORIZED REPRESENTATIVE

(TYPED): _____

AUTHORIZED REPRESENTATIVE

(SIGNATURE): _____

Sworn to and Subscribed before me this _____ day of _____, 20__

My Commission expires : _____ NOTARY PUBLIC _____

END OF DOCUMENT

SECTION 00 5000
CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 LICENSES

- A. Contractor is responsible for obtaining a valid license to use all copyrighted documents specified but not included in the Project Manual.

1.02 AGREEMENT AND CONDITIONS OF THE CONTRACT

- A. See Section 00 7200 - General Conditions for the General Conditions.
- B. See Section 00 7300 - Supplementary Conditions for the Supplementary Conditions.
- C. The Agreement form is AIA A101.
- D. The General Conditions are based on AIA A201.

1.03 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in the Contract Documents.
- B. Bond Forms:
 - 1. Performance and Payment Bond Form: Conform to those approved by the State of Delaware Office of Management and Budget.
- C. Post-Award Certificates and Other Forms:
 - 1. Application for Payment Forms: AIA G702 with AIA G703 (for Contractors).
- D. Clarification and Modification Forms:
 - 1. Change Order Form: AIA G701.
- E. Closeout Forms:
 - 1. Certificate of Substantial Completion Form: AIA G704.
 - 2. Affidavit of Payment of Debts and Claims Form: AIA G706.
 - 3. Affidavit of Release of Liens Form: AIA G706a.
 - 4. Consent of Surety to Final Payment Form: AIA G707.

1.04 REFERENCE STANDARDS

- A. AIA A101 - Standard Form of Agreement Between Owner and Contractor where the basis of Payment is a Stipulated Sum; 2017.
- B. AIA A201 - General Conditions of the Contract for Construction; 2017.
- C. AIA G701 - Change Order; 2017.
- D. AIA G702 - Application and Certificate for Payment; 1992.
- E. AIA G703 - Continuation Sheet; 1992.
- F. AIA G704 - Certificate of Substantial Completion; 2017.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 00 7310
SUPPLEMENTARY GENERAL CONDITIONS A201-2007

THE FOLLOWING SUPPLEMENTS MODIFY THE AIA DOCUMENT A201-2007, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION. WHERE A PORTION OF THE GENERAL CONDITIONS IS MODIFIED OR DELETED BY THE SUPPLEMENTARY CONDITIONS, THE UNALTERED PORTIONS OF THE GENERAL CONDITIONS SHALL REMAIN IN EFFECT.

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

1.1.1 THE CONTRACT DOCUMENTS

Delete the last sentence in its entirety and replace with the following:

"The Contract Documents also include Advertisement for Bid, Instructions to Bidder, sample forms, the Bid Form, the Contractor's completed Bid and the Award Letter."

Add the following Paragraph:

1.1.2 In the event of conflict or discrepancies among the Contract Documents, the Documents prepared by the State of Delaware, Division of Facilities Management shall take precedence over all other documents.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add the following Paragraphs:

1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

1.2.5 The word "PROVIDE" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.2.6 The word "PRODUCT" as used in the Contract Documents means all materials, systems and equipment.

1.5 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

Delete Paragraph 1.5.1 in its entirety and replace with the following:

"All pre-design studies, drawings, specifications and other documents, including those in electronic form, prepared by the Architect under this Agreement are, and shall remain, the property of the Owner whether the Project for which they are made is executed or not. Such documents may be used by the Owner to construct one or more like Projects without the approval of, or additional compensation to, the Architect. The Contractor, Subcontractors, Sub-subcontractors and Material or Equipment Suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Architect and the Architect's consultants appropriate to and for use in the execution of their Work under the Contract Documents. They are not to be used by the Contractor or any Subcontractor, Sub-subcontractor or Material and Equipment Supplier on other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Architect and Architect's consultants.

The Architect shall not be liable for injury or damage resulting from the re-use of drawings and specifications if the Architect is not involved in the re-use Project. Prior to re-use of construction documents for a Project in which the Architect is not also involved, the Owner will remove from such documents all identification of the original Architect, including name, address and professional seal or stamp."

Delete Paragraph 1.5.2 in its entirety.

ARTICLE 2: OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

To Subparagraph 2.2.3 - Add the following sentence:

"The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities."

Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor shall be furnished free of charge up to five (5) sets of the Drawings and Project Manuals. Additional sets will be furnished at the cost of reproduction, postage and handling.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Amend Paragraph 3.2.2 to state that any errors, inconsistencies or omissions discovered shall be reported to the Architect and Owner immediately.

Delete the third sentence in Paragraph 3.2.4.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

Add the following Paragraphs:

3.3.2.1 The Contractor shall immediately remove from the Work, whenever requested to do so by the Owner, any person who is considered by the Owner or Architect to be incompetent or disposed to be so disorderly, or who for any reason is not satisfactory to the Owner, and that person shall not again be employed on the Work without the consent of the Owner or the Architect.

3.3.4 The Contractor must provide suitable storage facilities at the Site for the proper protection and safe storage of their materials. Consult the Owner and the Architect before storing any materials.

3.3.5 When any room is used as a shop, storeroom, office, etc., by the Contractor or Subcontractor(s) during the construction of the Work, the Contractor making use of these areas will be held responsible for any repairs, patching or cleaning arising from such use.

3.4 LABOR AND MATERIALS

Add the Following Paragraphs:

3.4.4 Before starting the Work, each Contractor shall carefully examine all preparatory Work that has been executed to receive their Work. Check carefully, by whatever means are required, to insure that its Work and adjacent, related Work, will finish to proper contours, planes and levels. Promptly notify the General Contractor/Construction Manager of any defects or imperfections in preparatory Work which will in any way affect satisfactory completion of its Work. Absence of such notification will be construed as an acceptance of preparatory Work and later claims of defects will not be recognized.

3.4.5 Under no circumstances shall the Contractor's Work proceed prior to preparatory Work proceed prior to preparatory Work having been completely cured, dried and/or otherwise made satisfactory to receive this Work. Responsibility for timely installation of all materials rests solely with the Contractor responsible for that Work, who shall maintain coordination at all times.

3.5 WARRANTY

Add the following Paragraphs:

3.5.1 The Contractor will guarantee all materials and workmanship against original defects, except injury from proper and usual wear when used for the purpose intended, for two years after Acceptance by the Owner, and will maintain all items in perfect condition during the period of guarantee.

3.5.2 Defects appearing during the period of guarantee will be made good by the Contractor at his expense upon demand of the Owner, it being required that all work will be in perfect condition when the period of guarantee will have elapsed.

3.5.3 In addition to the General Guarantee there are other guarantees required for certain items for different periods of time than the two years as above, and are particularly so stated in that part of the specifications referring to same. The said guarantees will commence at the same time as the General Guarantee.

3.5.4 If the Contractor fails to remedy any failure, defect or damage within a reasonable time after receipt of notice, the Owner will have the right to replace, repair, or otherwise remedy the failure, defect or damage at the Contractor's expense.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

Add the following Paragraphs:

3.11.1 During the course of the Work, the Contractor shall maintain a record set of drawings on which the Contractor shall mark the actual physical location of all piping, valves, equipment, conduit, outlets, access panels, controls, actuators, including all appurtenances that will be concealed once construction is complete, etc., including all invert elevations.

3.11.2 At the completion of the project, the Contractor shall obtain a set of reproducible drawings from the Architect, and neatly transfer all information outlined in 3.11.1 to provide a complete record of the as-built conditions.

3.11.3 The Contractor shall provide two (2) prints of the as-built conditions, along with the reproducible drawings themselves, to the Owner and one (1) set to the Architect. In addition, attach one complete set to each of the Operating and Maintenance Instructions/Manuals.

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

In the second sentence of the paragraph, insert "indemnify and" between "shall" and "hold".

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

Delete the first sentence of Paragraph 4.2.7 and replace with the following:

The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples for the purpose of checking for conformance with the Contract Documents.

Delete the second sentence of Paragraph 4.2.7 and replace with the following:

The Architect's action will be taken with such reasonable promptness as to cause no delay in the Work in the activities of the Owner, Contractor or separate Contractors, while allowing sufficient time in the Owner's professional judgment to permit adequate review.

Add the following Subparagraph:

4.2.10.1 There will be no full-time project representative provided by the Owner or Architect on this project.

Add the following to the end of Paragraph 4.2.13:

“and in compliance with all local requirements.”

ARTICLE 5: SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

Delete Paragraph 5.2.3 in its entirety and replace with the following:

5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection, subject to the statutory requirements of 29 Delaware Code § 6962(d)(10)b.3 and 4.

ARTICLE 6: CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

6.2.3 In the second sentence, strike the word “shall” and insert the word “may”.

ARTICLE 7: CHANGES IN THE WORK

(SEE ARTICLE 7: CHANGES IN WORK IN THE GENERAL REQUIREMENTS)

ARTICLE 8: TIME

8.2 PROGRESS AND COMPLETION

Add the following Paragraphs:

8.2.1.1 Refer to Specification Section SUMMARY OF WORK for Contract time requirements.

8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

8.3 DELAYS AND EXTENSION OF TIME

8.3.1 Strike “arbitration” and insert “remedies at law or in equity”.

Add the following Paragraph:

8.3.2.1 The Contractor shall update the status of the suspension, delay, or interruption of the Work with each Application for Payment. (The Contractor shall report the termination of such cause immediately upon the termination thereof.) Failure to comply with this procedure shall constitute a waiver for any claim for adjustment of time or price based upon said cause.

Delete Paragraph 8.3.3 in its entirety and replace with the following:

8.3.3 Except in the case of a suspension of the Work directed by the Owner, an extension of time under the provisions of Paragraph 8.3.1 shall be the Contractor's sole remedy in

the progress of the Work and there shall be no payment or compensation to the Contractor for any expense or damage resulting from the delay.

Add the following Paragraph:

8.3.4 By permitting the Contractor to work after the expired time for completion of the project, the Owner does not waive their rights under the Contract.

ARTICLE 9: PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following Paragraphs:

9.2.1 The Schedule of Values shall be submitted using AIA Document G702, Continuation Sheet to G703.

9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.

9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.

9.3.5 The Contractor shall provide a current and updated Progress Schedule to the Architect with each Application for Payment. Failure to provide Schedule will be just cause for rejection of Application for Payment.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following to 9.5.1:

.8failure to provide a current Progress Schedule;

.9a lien or attachment is filed;

.10failure to comply with mandatory requirements for maintaining Record Documents.

9.6 PROGRESS PAYMENTS

Delete Paragraph 9.6.1 in its entirety and replace with the following:

9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

9.7 FAILURE OF PAYMENT

F.In first sentence, strike "seven" and insert "thirty (30)".

Also strike "binding dispute resolution" and insert "remedies at law or in equity".

9.8 SUBSTANTIAL COMPLETION

To Subparagraph 9.8.3- Add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections, including but not limited to any Architect's fees."

9.8.5 In the second sentence, strike "shall" and insert "may".

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Paragraphs:

10.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Paragraph:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.3 in its entirety.

Delete Paragraphs 10.3.6 in its entirety.

ARTICLE 11: INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.4 Strike "the Owner" immediately following "(1)"
and strike "and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations."

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Paragraph 11.3 in its entirety and replace with the following:

11.3 The State will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary. Any mandatory deductible required by the Contractor's Insurance shall be the responsibility of the Contractor.

11.4 PERFORMANCE BOND AND PAYMENT BOND

Add the following sentence: "The bonds will conform to those forms approved by the Office of Management and Budget."

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.2.2 AFTER SUBSTANTIAL COMPLETION

Add the following Paragraph:

12.2.2.1.1 At any time during the progress of the Work, or in any case where the nature of the defects will be such that it is not expedient to have corrected, the Owner, at its option, will have the right to deduct such sum, or sums, of money from the amount of the Contract as it considers justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

12.2.2.1 Strike "one" and insert "two".

12.2.2.2 Strike "one" and insert "two".

12.2.2.3 Strike "one" and insert "two".

12.2.5 In second sentence, strike "one" and insert "two".

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

Strike "except that, if the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4" .

13.6 INTEREST

Strike "the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located." Insert "30 days of presentment of the authorized Certificate of Payment at the annual rate of 12% or 1% per month.

13.7 TIME LIMITS ON CLAIMS

Strike the last sentence.

ADD THE FOLLOWING PARAGRAPH:

13.8 CONFLICTS WITH FEDERAL STATUTES OR REGULATIONS

13.8.1 If any provision, specifications or requirement of the Contract Documents conflict or is inconsistent with any statute, law or regulation of the government of the United State of America, the Contractor shall notify the Architect and Owner immediately upon discovery.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Paragraph 14.4.3 in its entirety and replace with the following:

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and cost incurred by reason of such termination along with reasonable overhead.

ARTICLE 15: CLAIMS AND DISPUTES

15.1.2 THROUGHOUT THE PARAGRAPH STRIKE "21" AND INSERT "45."

15.1.6 CLAIMS FOR CONSEQUENTIAL DAMAGES

Delete Paragraph 15.1.6 in its entirety.

15.2 INITIAL DECISION

Delete Paragraph 15.2.5 in its entirety and replace with the following:

15.2.5 The Architect will approve or reject Claims by written decision, which shall state the reasons therefore and shall notify the parties of any change in the Contract Sum or Contract Time or both. The approval or rejection of a Claim by the Architect shall be subject to mediation and other remedies at law or in equity.

Delete Paragraph 15.2.6 and its subparagraphs in their entirety.

15.3 MEDIATION

15.3.1 Strike “binding dispute resolution” and insert “any or all remedies at law or in equity.”

15.3.2 In the first sentence, delete “administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedure in effect on the date of the Agreement,” Strike “binding dispute resolution” and insert “remedies at law and in equity”.

15.4 ARBITRATION

Delete Paragraph 15.4 and its sub-sections in its entirety.

END OF SUPPLEMENTARY GENERAL CONDITIONS

SECTION 00 7313
SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

- A. The General Conditions of the Contract for Construction, AIA Document A201, 2007 edition, Articles 1 through 15 inclusive, is a part of this contract and is bound herewith.
- B. References to Articles herein are to Articles in A201.

1.02 SUPPLEMENTARY CONDITIONS

- A. The following provisions modify, change, delete from or add to AIA Document A201. Where any article of the General Conditions is modified or any paragraph, subparagraph or clause thereof is modified or deleted by these provisions, the unaltered provisions of that article, paragraph, sub-paragraph or clause shall remain in effect.

1.03 REFERENCE TO DIVISION 1 - GENERAL REQUIREMENTS

- A. Certain provisions of Division 1 GENERAL REQUIREMENTS supplement the administrative and work-related provisions of the GENERAL CONDITIONS.
- B. Articles affected are cross referenced in the various Sections of Division 1.

ARTICLE 1 - GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

Delete last paragraph of 1.1.1. Add to 1.1.1 the following clause:

- 1.1.1.1 The Invitation to Bid, the bid forms, the contractor's completed bid and all addenda related to bidding requirements are expressly enumerated as contract documents.

Add to 1.1 the following Subparagraphs:

1.1.9 PROVIDE

- 1.1.9.1 The term "Provide" as used in the Contract Documents shall mean "FURNISH AND INSTALL" and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.1.10 PRODUCT

- 1.1.10.1 The term "PRODUCT" as used in the Contract Documents means all materials, systems and equipment.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

Add to 1.2.4. the following Subparagraph:

- 1.2.4 In the case of an inconsistency between the Drawings and the Specifications, or within either document not clarified by addendum, the better quality or greater quantity of work shall be provided in accordance with the Architect's interpretation.

ARTICLE 2 - OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

To Subparagraph 2.2.3 - Add the following sentence:

- "The Contractor, at their expense shall bear the costs to accurately identify the location of all underground utilities in the area of their excavation and shall bear all cost for any repairs required, out of failure to accurately identify said utilities."

Delete Subparagraph 2.2.5 in its entirety and substitute the following:

2.2.5 The Contractor will obtain Drawings and Project Manuals as described in the Invitation to Bid.

ARTICLE 3 - CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

Amend Paragraph 3.2.2 to state that any errors, inconsistencies or omissions discovered shall be reported to the Architect and Owner immediately.

Delete the third sentence in Paragraph 3.2.4.

ARTICLE 4 - ADMINISTRATION OF THE CONTRACT

4.2 ADMINISTRATION OF THE CONTRACT

Add the following clause:

4.2.10.1 There will be no full-time project representative provided by the Owner or Architect on this project.

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

Delete Paragraph 6.1.4 in its entirety.

6.2 MUTUAL RESPONSIBILITY

6.2.3 In the second sentence, strike the word "shall" and insert the word "may".

ARTICLE 7 - CHANGES IN THE WORK

Add a new Subparagraph 7.1.4 to read as follows:

7.1.4 The additional cost, or credit to the Owner resulting from a change in the work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.

7.1.4.1 "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes direct salary plus customary fringe benefits (prevailing wage rates) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.27 times DPE).

7.1.4.2 "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.

7.1.4.3 In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding five percent (5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. There will be no other costs associated with the change order."

ARTICLE 8 - TIME

8.2 PROGRESS AND COMPLETION

Add the following subparagraph:

8.2.1.1 Refer to Section 01 1000 Summary of Work for contract time requirements.

Add the following subparagraph:

8.2.4 If the Work falls behind the Progress Schedule as submitted by the Contractor, the Contractor shall employ additional labor and/or equipment necessary to bring the Work into compliance with the Progress Schedule at no additional cost to the Owner.

ARTICLE 9 - PAYMENTS AND COMPLETION

9.2 SCHEDULE OF VALUES

Add the following Paragraphs:

9.2.1 The Schedule of Values shall be submitted using AIA Document G702, Continuation Sheet to G703.

9.2.2 The Schedule of Values is to include a line item for Project Closeout Document Submittal. The value of this item is to be no less than 1% of the initial contract amount.

9.3 APPLICATIONS FOR PAYMENT

Add the following Paragraph:

9.3.1.3 Application for Payment shall be submitted on AIA Document G702 "Application and Certificate for Payment", supported by AIA Document G703 "Continuation Sheet". Said Applications shall be fully executed and notarized.

Add the following Paragraphs:

9.3.4 Until Closeout Documents have been received and outstanding items completed the Owner will pay 95% (ninety-five percent) of the amount due the Contractor on account of progress payments.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

Add the following to 9.5.1:

.8 a lien or attachment is filed;

.9 failure to comply with mandatory requirements for maintaining Record Documents.

Add the following subparagraphs:

9.5.4 The Contractor shall have the obligation to remove any liens filed against the Project or any part thereof, and shall bear all costs connected with said removal prior to the Owner being obligated to make the next monthly progress payment.

9.5.5 No payment of monies nor any partial or entire use of occupancy of the Project by the Owner shall constitute an acceptance of any Work not in accordance with the Contract Documents.

9.6 PROGRESS PAYMENTS

Delete Paragraph 9.6.1 in its entirety and replace with the following:

9.6.1 After the Architect has approved and issued a Certificate for Payment, payment shall be made by the Owner within 30 days after Owner's receipt of the Certificate for Payment.

9.8 SUBSTANTIAL COMPLETION

To Subparagraph 9.8.3- Add the following sentence:

"If the Architect is required to make more than 2 inspections of the same portion of work, the Contractor shall be responsible for all costs associated with subsequent inspections, including but not limited to any Architect's fees."

9.8.5 In the second sentence, strike "shall" and insert "may".

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

Add the following Paragraphs:

10.1.1 Each Contractor shall develop a safety program in accordance with the Occupational Safety and Health Act of 1970. A copy of said plan shall be furnished to the Owner and Architect prior to the commencement of that Contractor's Work.

10.1.2 Each Contractor shall appoint a Safety Representative. Safety Representatives shall be someone who is on site on a full time basis. If deemed necessary by the Owner or Architect, Contractor Safety meetings will be scheduled. The attendance of all Safety Representatives will be required. Minutes will be recorded of said meetings by the Contractor and will be distributed to all parties as well as posted in all job offices/trailers etc.

10.2 SAFETY OF PERSONS AND PROPERTY

Add the following Paragraph:

10.2.4.1 As required in the Hazardous Chemical Act of June 1984, all vendors supplying any material that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a caution warning on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in foreseeable emergency situations. Material Safety Data Sheets shall be provided directly to the Owner, along with the shipping slips that include those products.

Add the following subparagraph:

10.2.8 The Contractor shall certify to the Owner that materials incorporated into the work are free of all asbestos. This certification may be in the form of Material Safety Data Sheets (MSDS) provided by the product manufacturer for the materials used in construction by the Contractor.

10.3 HAZARDOUS MATERIALS

Delete Paragraph 10.3.3 in its entirety.

Delete Paragraphs 10.3.6 in its entirety.

ARTICLE 11 - INSURANCE

11.1 CONTRACTOR'S LIABILITY INSURANCE

Add the following Clause 11.1.2.1 to 11.1.2:

11.1.2.1 The insurance required by Subparagraph 11.1.1 shall be written for not less than the following, or greater if required by law:

Workmen's Compensation:

State: Statutory

Applicable Federal (e.g., Longshoremen's): Statutory

Employer's Liability

\$ 100,000

Comprehensive General Liability (including Premises Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage):

Bodily Injury

\$ 500,000	Each Person
\$ 1,000,000	Each Occurrence
\$ 1,000,000	Annual Aggregate

Property Damage

\$ 500,000	Each Occurrence
\$ 500,000	Annual Aggregate

Products and Completed Operations to be maintained for 2 years after final payment.

Property Damage Liability Insurance will provide X, C, or U coverage as applicable.

Contractual Liability:

Bodily Injury

\$ 500,000	Each Person
\$1,000,000	Each Occurrence
\$1,000,000	Annual Aggregate

Property Damage:

\$ 500,000	Each Occurrence
\$1,000,000	Annual Aggregate

Personal Injury, with Employment Exclusion deleted:

\$ 500,000	Each Occurrence
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Comprehensive Automobile Liability:

Bodily Injury:

\$1,000,000	Each Person
\$1,000,000	Each Occurrence

Property Damage:

\$ 500,000	Each Occurrence
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Subcontractor's policies shall include contingent and contractual liability coverage in the same minimum amounts as 3, above.

Add the following Clauses 11.1.3.1 and 11.1.3.2 to 11.1.3:

11.1.3.1 The Contractor shall furnish one copy each of Certificates of Insurance herein required for each copy of the Agreement which shall specifically set forth evidence of all coverage required by Subparagraph 11.1.2. The form of the Certificate shall be AIA Document G705 or insurance carrier's standard form, which presents required information. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits.

11.1.3.2 Certificates of insurance filed with the Owner shall guarantee fifteen (15) days prior notice of cancellation, non-renewal or any change in coverage and limits of liability shown as included on certificates.

Add the following Subparagraphs 11.1.5 through 11.1.8:

11.1.5 The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. He shall carry such insurance coverage as he desires on his own property such as his field office, storage sheds or other structures erected upon the project site that belong to him and for his own use. The Subcontractors involved with this project shall

carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.

11.1.6 Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverage shall be filed with and approved by the Owner.

11.1.7 The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by him or his Subcontractors during the entire construction period on this project.

11.1.8 Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and his Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.

11.2 OWNER'S LIABILITY INSURANCE

Delete Paragraph 11.2 and its subparagraphs in their entirety.

Delete Paragraph 11.3 and its subparagraphs in their entirety and replace with the following:

11.3 PROPERTY INSURANCE

11.3.1 The Owner will not provide Builder's All Risk Insurance for the Project. The Contractor and all Subcontractors shall provide property coverage for their tools and equipment, as necessary.

11.4 PERFORMANCE BOND AND PAYMENT BOND

Add the following subparagraphs:

11.4.3 Performance and Payment Bond: Simultaneously with delivery of the executed contract, the contractor must deliver to the Owner an executed performance bond in the amount of 100% of the accepted bid as security for the faithful performance of his contract including the required Warranty and Guaranties; and an executed labor and material payment bond in the amount of 100% of the accepted bid as security for the payment of all persons performing labor or furnishing materials in connection therewith and conditioned that the contractor shall well and faithfully pay all daily labor employed by him for this contract in full once each week. Performance and payment bond may be in a combined form. The bonding company's standard forms are acceptable provided all coverage requirements are included. The bonds shall be maintained in full force for a period of not less than twelve (12) months after the date of the Certificate for Substantial Completion.

11.4.4 Bonds are to be in favor of the Owner and shall be paid for by the contractor and furnished by a surety company licensed in the State that the project is located. The Owner has the right to demand proof that the parties signing the bonds are duly authorized to do so.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.6 INTEREST

Strike “the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.” Insert “30 days of presentment of the authorized Certificate of Payment at the annual rate of 6% or 0.5% per month.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

Delete Subparagraph 14.4.3 in its entirety and replace with the following:

14.4.3 In case of such termination for Owner’s convenience, the Contractor shall be entitled to receive payment for work executed, materials purchased and reasonable overhead.

ADD ARTICLE 16- CONTRACTOR RESPONSIBILITIES

16.1 The Contractor shall enforce strict discipline and good order among the Contractor’s employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

16.2 The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.

16.3 Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.

16.4 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.

16.5 The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor’s employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.

16.6 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract.

16.6.1 At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor’s tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.

16.7 To the fullest extent permitted by law, the Contractor shall indemnify and otherwise hold harmless the Owner, its agents and employees, and the Architect, his agents and employees, from any and all liability, suits, actions or claims, together with all costs, expenses or attorneys’ fees, arising out of their performance of work or supplying materials and services in connection with this contract. This agreement to indemnify and hold harmless shall cover all suits, actions, claims or liabilities asserted against the Owner, its agents and employees, and the

Architect, his agents and employees, to the extent caused in whole or part by negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate or abridge other rights or obligations of indemnity which would otherwise exist.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

SECTION 00 9000

DE STATE GENERAL REQUIREMENTS

ARTICLE 1: GENERAL

1.01 CONTRACT DOCUMENTS

- A. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to an extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.
- B. Work including material purchases shall not begin until the Contractor is in receipt of a bonafide State of Delaware Purchase Order. Any work performed or material purchases prior to the issuance of the Purchase Order is done at the Contractor's own risk and cost.

1.02 EQUALITY OF EMPLOYMENT OPPORTUNITY ON PUBLIC WORKS

- A. For Public Works Projects financed in whole or in part by state appropriation the Contractor agrees that during the performance of this contract:
 - 1. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, sex, color, sexual orientation, gender identity or national origin. The Contractor will take positive steps to ensure that applicants are employed and that employees are treated during employment without regard to their race, creed, sex, color, sexual orientation, gender identity or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided by the contracting agency setting forth this nondiscrimination clause.
 - 2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, sex, color, sexual orientation, gender identity or national origin."

ARTICLE 2: OWNER

(NO ADDITIONAL GENERAL REQUIREMENTS - SEE SUPPLEMENTARY GENERAL CONDITIONS)

ARTICLE 3: CONTRACTOR

3.01 SCHEDULE OF VALUES

- A. The successful Bidder shall within twenty (20) days after receiving notice to proceed with the work, furnish to the Owner a complete schedule of values on the various items comprising the work.

3.02 SUBCONTRACTS

- A. Upon approval of Subcontractors, the Contractor shall award their Subcontracts as soon as possible after the signing of their own contract and see that all material, their own and those of their Subcontractors, are promptly ordered so that the work will not be delayed by failure of materials to arrive on time.

- B. Before commencing any work or construction, the General Contractor is to consult with the Owner as to matters in connection with access to the site and the allocation of Ground Areas for the various features of hauling, storage, etc.
- C. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions.
- D. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.
- E. The Contractor warrants to the Owner that materials and equipment furnished will be new and of good quality, unless otherwise permitted, and that the work will be free from defects and in conformance with the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved, may be considered defective. If required by the Owner, the Contractor shall furnish evidence as to the kind and quality of materials and equipment provided.
- F. Unless otherwise provided, the Contractor shall pay all sales, consumer, use and other similar taxes, and shall secure and pay for required permits, fees, licenses, and inspections necessary for proper execution of the Work.
- G. The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, and lawful orders of public authorities bearing on performance of the Work. The Contractor shall promptly notify the Owner if the Drawings and Specifications are observed to be at variance therewith.
- H. The Contractor shall be responsible to the Owner for the acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing portions of the Work under contract with the Contractor.
- I. The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work the Contractor shall remove from and about the Project all waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials. The Contractor shall be responsible for returning all damaged areas to their original conditions.

3.03 STATE LICENSE AND TAX REQUIREMENTS

- A. Each Contractor and Subcontractor shall be licensed to do business in the State of Delaware and shall pay all fees and taxes due under State laws. In conformance with Section 2503, Chapter 25, Title 30, Delaware Code, "the Contractor shall furnish the State Tax Department within ten (10) days after award of the Contract, a statement of the total values of each contract and Subcontract, together with the names and addresses of the contracting parties "

3.04 LARGE PUBLIC WORKS CONTRACT PROCEDURES

- A. The Contractor shall comply with all requirements set forth in Section 6962, Chapter 69, Title 29 of the Delaware Code.
- B. During the contract Work, the Contractor and each listed Subcontractor, shall implement an Employee Drug Testing Program in accordance with OMB Regulation 4104- "Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on "Large Public Works Projects". "Large Public Works" is based upon the current threshold required for bidding Public Works as set by the Purchasing and Contracting Advisory Council.

ARTICLE 4: ADMINISTRATION OF THE CONTRACT

4.01 CONTRACT SURETY

- A. Performance Bond And Labor And Material Payment Bond
1. All bonds will be required as follows unless specifically waived elsewhere in the Bidding Documents.
 2. Contents of Performance Bonds - The bond shall be conditioned upon the faithful compliance and performance by the successful bidder of each and every term and condition of the contract and the proposal, plans, specifications, and bid documents thereof. Each term and condition shall be met at the time and in the manner prescribed by the Contract, Bid documents and the specifications, including the payment in full to every person furnishing material or performing labor in the performance of the Contract, of all sums of money due the person for such labor and material. (The bond shall also contain the successful bidder's guarantee to indemnify and save harmless the State and the agency from all costs, damages and expenses growing out of or by reason of the Contract in accordance with the Contract.)
 3. Invoking a Performance Bond - The agency may, when it considers that the interest of the State so require, cause judgement to be confessed upon the bond.
 4. Within twenty (20) days after the date of notice of award of contract, the Bidder to whom the award is made shall furnish a Performance Bond and Labor and Material Payment Bond, each equal to the full amount of the Contract price to guarantee the faithful performance of all terms, covenants and conditions of the same. The bonds are to be issued by an acceptable Bonding Company licensed to do business in the State of Delaware and shall be issued in duplicate.
 5. Performance and Payment Bonds shall be maintained in full force (warranty bond) for a period of two (2) years after the date of the Certificate for Final Payment. The Performance Bond shall guarantee the satisfactory completion of the Project and that the Contractor will make good any faults or defects in his work which may develop during the period of said guarantees as a result of improper or defective workmanship, material or apparatus, whether furnished by themselves or their Sub-Contractors. The Payment Bond shall guarantee that the Contractor shall pay in full all persons, firms or corporations who furnish labor or material or both labor and material for, or on account of, the work included herein. The bonds shall be paid for by this Contractor. The Owner shall have the right to demand that the proof parties signing the bonds are duly authorized to do so.

4.02 FAILURE TO COMPLY WITH CONTRACT

- A. If any firm entering into a contract with the State, or Agency that neglects or refuses to perform or fails to comply with the terms thereof, the Agency which signed the Contract may terminate the Contract and proceed to award a new contract in accordance with this Chapter 69, Title 29 of the Delaware Code or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the Performance Bond. Nothing herein shall preclude the Agency from pursuing additional remedies as otherwise provided by law.

4.03 CONTRACT INSURANCE AND CONTRACT LIABILITY

- A. In addition to the bond requirements stated in the Bid Documents, each successful Bidder shall purchase adequate insurance for the performance of the Contract and, by submission of a Bid, agrees to indemnify and save harmless and to defend all legal or equitable actions brought against the State, any Agency, officer and/or employee of the State, for and from all claims of

liability which is or may be the result of the successful Bidder's actions during the performance of the Contract.

- B. The purchase or nonpurchase of such insurance or the involvement of the successful Bidder in any legal or equitable defense of any action brought against the successful Bidder based upon work performed pursuant to the Contract will not waive any defense which the State, its agencies and their respective officers, employees and agents might otherwise have against such claims, specifically including the defense of sovereign immunity, where applicable, and by the terms of this section, the State and all agencies, officers and employees thereof shall not be financially responsible for the consequences of work performed, pursuant to said contract.

4.04 RIGHT TO AUDIT RECORDS

- A. The Owner shall have the right to audit the books and records of a Contractor or any Subcontractor under any Contract or Subcontract to the extent that the books and records relate to the performance of the Contract or Subcontract.
- B. Said books and records shall be maintained by the Contractor for a period of seven (7) years from the date of final payment under the Prime Contract and by the Subcontractor for a period of seven (7) years from the date of final payment under the Subcontract.

ARTICLE 5: SUBCONTRACTORS

5.01 SUBCONTRACTING REQUIREMENTS

- A. All contracts for the construction, reconstruction, alteration or repair of any public building (not a road, street or highway) shall be subject to the following provisions:
 - 1. A contract shall be awarded only to a Bidder whose Bid is accompanied by a statement containing, for each Subcontractor category, the name and address (city or town and State only - street number and P.O. Box addresses not required) of the subcontractor whose services the Bidder intends to use in performing the Work and providing the material for such Subcontractor category.
 - 2. A Bid will not be accepted nor will an award of any Contract be made to any Bidder which, as the Prime Contractor, has listed itself as the Subcontractor for any Subcontractor unless:
 - a. It has been established to the satisfaction of the awarding Agency that the Bidder has customarily performed the specialty work of such Subcontractor category by artisans regularly employed by the Bidder's firm;
 - b. That the Bidder is duly licensed by the State to engage in such specialty work, if the State requires licenses; and
 - c. That the Bidder is recognized in the industry as a bona fide Subcontractor or Contractor in such specialty work and Subcontractor category.
- B. The decision of the awarding Agency as to whether a Bidder who list itself as the Subcontractor for a Subcontractor category shall be final and binding upon all Bidders, and no action of any nature shall lie against any awarding agency or its employees or officers because of its decision in this regard.
- C. After such a Contract has been awarded, the successful Bidder shall not substitute another Subcontractor for any Subcontractor whose name was set forth in the statement which accompanied the Bid without the written consent of the awarding Agency.
- D. No Agency shall consent to any substitution of Subcontractors unless the Agency is satisfied that the Subcontractor whose name is on the Bidders accompanying statement:
 - 1. Is unqualified to perform the work required;

2. Has failed to execute a timely reasonable Subcontract;
 3. Has defaulted in the performance on the portion of the work covered by the Subcontract;
or
 4. Is no longer engaged in such business.
- E. Should a Bidder be awarded a contract, such successful Bidder shall provide to the agency the taxpayer identification license numbers of such subcontractors. Such numbers shall be provided on the later of the date on which such subcontractor is required to be identified or the time the contract is executed. The successful Bidder shall provide to the agency to which it is contracting, within 30 days of entering into such public works contract, copies of all Delaware Business licenses of subcontractors and/or independent contractors that will perform work for such public works contract. However, if a subcontractor or independent contractor is hired or contracted more than 20 days after the Bidder entered the public works contract the Delaware Business license of such subcontractor or independent contractor shall be provided to the agency within 10 days of being contracted or hired.

5.02 PENALTY FOR SUBSTITUTION OF SUBCONTRACTORS

- A. Should the Contractor fail to utilize any or all of the Subcontractors in the Contractor's Bid statement in the performance of the Work on the public bidding, the Contractor shall be penalized in the amount of one (1) percent of Contract amount not to exceed \$10,000. The Agency may determine to deduct payments of the penalty from the Contractor or have the amount paid directly to the Agency. Any penalty amount assessed against the Contractor may be remitted or refunded, in whole or in part, by the Agency awarding the Contract, only if it is established to the satisfaction of the Agency that the Subcontractor in question has defaulted or is no longer engaged in such business. No claim for the remission or refund of any penalty shall be granted unless an application is filed within one year after the liability of the successful Bidder accrues. All penalty amounts assessed and not refunded or remitted to the contractor shall be reverted to the State.

5.03 ASBESTOS ABATEMENT

- A. The selection of any Contractor to perform asbestos abatement for State-funded projects shall be approved by the Office of Management and Budget/Division of Facilities Management pursuant to Chapter 78 of Title 16.

5.04 STANDARDS OF CONSTRUCTION FOR THE PROTECTION OF THE PHYSICALLY HANDICAPPED

- A. All Contracts shall conform with the standard established by the Delaware Architectural Accessibility Board unless otherwise exempted by the Board.

5.05 CONTRACT PERFORMANCE

- A. Any firm entering into a Public Works Contract that neglects or refuses to perform or fails to comply with its terms, the Agency may terminate the Contract and proceed to award a new Contract or may require the Surety on the Performance Bond to complete the Contract in accordance with the terms of the performance Bond.

ARTICLE 6: CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

6.01 CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS

- A. The Owner reserves the right to simultaneously perform other construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other Projects at the same site.

- B. The Contractor shall afford the Owner and other Contractors reasonable opportunity for access and storage of materials and equipment, and for the performance of their activities, and shall connect and coordinate their activities with other forces as required by the Contract Documents.

ARTICLE 7: CHANGES IN THE WORK

7.01 CHANGES IN THE WORK

- A. The Owner, without invalidating the Contract, may order changes in the Work consisting of Additions, Deletions, Modifications or Substitutions, with the Contract Sum and Contract completion date being adjusted accordingly. Such changes in the Work shall be authorized by written Change Order signed by the Professional, as the duly authorized agent, the Contractor and the Owner.
- B. The Contract Sum and Contract Completion Date shall be adjusted only by a fully executed Change Order.
- C. The additional cost, or credit to the Owner resulting from a change in the Work shall be by mutual agreement of the Owner, Contractor and the Architect. In all cases, this cost or credit shall be based on the 'DPE' wages required and the "invoice price" of the materials/equipment needed.
 - 1. "DPE" shall be defined to mean "direct personnel expense". Direct payroll expense includes direct salary plus customary fringe benefits (prevailing wage rates) and documented statutory costs such as workman's compensation insurance, Social Security/Medicare, and unemployment insurance (a maximum multiplier of 1.35 times DPE).
 - 2. "Invoice price" of materials/equipment shall be defined to mean the actual cost of materials and/or equipment that is paid by the Contractor, (or subcontractor), to a material distributor, direct factory vendor, store, material provider, or equipment leasing entity. Rates for equipment that is leased and/or owned by the Contractor or subcontractor(s) shall not exceed those listed in the latest version of the "Means Building Construction Cost Data" publication.
 - 3. In addition to the above, the General Contractor is allowed a fifteen percent (15%) markup for overhead and profit for additional work performed by the General Contractor's own forces. For additional subcontractor work, the Subcontractor is allowed a fifteen percent overhead and profit on change order work above and beyond the direct costs stated previously. To this amount, the General Contractor will be allowed a mark-up not exceeding seven point five percent (7.5%) on the subcontractors work. These mark-ups shall include all costs including, but not limited to: overhead, profit, bonds, insurance, supervision, etc. No markup is permitted on the work of a Sub-subcontractor. No additional costs shall be allowed for changes related to the Contractor's onsite superintendent/staff, or project manager, unless a change in the work changes the project duration and is identified by the CPM schedule. There will be no other costs associated with the change order.

ARTICLE 8: TIME

8.01 TIME

- A. Time limits, if any, are as stated in the Project Manual. By executing the Agreement, the Contractor confirms that the stipulated limits are reasonable, and that the Work will be completed within the anticipated time frame.

- B. If progress of the Work is delayed at any time by changes ordered by the Owner, by labor disputes, fire, unusual delay in deliveries, abnormal adverse weather conditions, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be extended for such reasonable time as the Owner may determine.
- C. Any extension of time beyond the date fixed for completion of the construction and acceptance of any part of the Work called for by the Contract, or the occupancy of the building by the Owner, in whole or in part, previous to the completion shall not be deemed a waiver by the Owner of his right to annul or terminate the Contract for abandonment or delay in the matter provided for, nor relieve the Contractor of full responsibility.

8.02 SUSPENSION AND DEBARMENT

- A. Per Section 6962(d)(14), Title 29, Delaware Code, "Any Contractor who fails to perform a public works contract or complete a public works project within the time schedule established by the Agency in the Invitation To Bid, may be subject to Suspension or Debarment for one or more of the following reasons: 1) failure to supply the adequate labor supply ratio for the project; 2) inadequate financial resources; or, 3) poor performance on the Project."
- B. "Upon such failure for any of the above stated reasons, the Agency that contracted for the public works project may petition the Director of the Office of Management and Budget for Suspension or Debarment of the Contractor. The Agency shall send a copy of the petition to the Contractor within three (3) working days of filing with the Director. If the Director concludes that the petition has merit, the Director shall schedule and hold a hearing to determine whether to suspend the Contractor, debar the Contractor or deny the petition. The Agency shall have the burden of proving, by a preponderance of the evidence, that the Contractor failed to perform or complete the public works project within the time schedule established by the Agency and failed to do so for one or more of the following reasons: 1) failure to supply the adequate labor supply ratio for the project; 2) inadequate financial resources; or, 3) poor performance on the project. Upon a finding in favor of the Agency, the Director may suspend a Contractor from Bidding on any project funded, in whole or in part, with public funds for up to 1 year for a first offense, up to 3 years for a second offense and permanently debar the Contractor for a third offense. The Director shall issue a written decision and shall send a copy to the Contractor and the Agency. Such decision may be appealed to the Superior Court within thirty (30) days for a review on the record."

8.03 RETAINAGE

- A. Per Section 6962(d)(5) a., Title 29, Delaware Code: The Agency may at the beginning of each public works project establish a time schedule for the completion of the project. If the project is delayed beyond the completion date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.
- B. This forfeiture of retainage also applies to the timely completion of the punchlist. A punchlist will only be prepared upon the mutual agreement of the Owner, Architect and Contractor. Once the punchlist is prepared, all three parties will by mutual agreement, establish a schedule for its completion. Should completion of the punchlist be delayed beyond the established date due to the Contractor's failure to meet their responsibilities, the Agency may hold permanently, at its discretion, all or part of the Contractor's retainage.

ARTICLE 9: PAYMENTS AND COMPLETION

9.01 APPLICATION FOR PAYMENT

- A. Applications for payment shall be made upon AIA Document G702. There will be a five percent (5%) retainage on all Contractor's monthly invoices until completion of the project. This retainage will become payable upon receipt of all required closeout documentation, provided all other requirements of the Contract Documents have been met.
- B. A date will be fixed for the taking of the monthly account of work done. Upon receipt of Contractor's itemized application for payment, such application will be audited, modified, if found necessary, and approved for the amount. Statement shall be submitted to the Owner.
- C. Article 6516, Chapter 65, Title 29 of the Delaware Code stipulates annualized interest not to exceed 12% per annum beginning thirty (30) days after the "presentment" (as opposed to the date) of the invoice."

9.02 PARTIAL PAYMENTS

- A. Any public works Contract executed by any Agency may provide for partial payments at the option of the Owner with respect to materials placed along or upon the sites or stored at secured locations, which are suitable for use in the performance of the contract.
- B. When approved by the agency, partial payment may include the values of tested and acceptable materials of a nonperishable or noncontaminative nature which have been produced or furnished for incorporation as a permanent part of the work yet to be completed, provided acceptable provisions have been made for storage.
 - 1. Any allowance made for materials on hand will not exceed the delivered cost of the materials as verified by invoices furnished by the Contractor, nor will it exceed the contract bid price for the material complete in place.
- C. If requested by the Agency, receipted bills from all Contractors, Subcontractors, and material, men, etc., for the previous payment must accompany each application for payment. Following such a request, no payment will be made until these receipted bills have been received by the Owner.

9.03 SUBSTANTIAL COMPLETION

- A. When the building has been made suitable for occupancy, but still requires small items of miscellaneous work, the Owner will determine the date when the project has been substantially completed.
- B. If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and without terminating the Contract, the Owner may make payment of the balance due for the portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment that it shall not constitute a waiver of claims.
- C. On projects where commissioning is included, the commissioning work as defined in the specifications must be complete prior to the issuance of substantial completion.

9.04 FINAL PAYMENT

- A. Final payment, including the five percent (5%) retainage, shall be made within thirty (30) days after the Work is fully completed and the Contract fully performed and provided that the Contractor has submitted the following closeout documentation (in addition to any other documentation required elsewhere in the Contract Documents):

1. Evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the work have been paid,
2. An acceptable RELEASE OF LIENS,
3. Copies of all applicable warranties,
4. As-built drawings,
5. Operations and Maintenance Manuals,
6. Instruction Manuals,
7. Consent of Surety to final payment.
8. The Owner reserves the right to retain payments, or parts thereof, for its protection until the foregoing conditions have been complied with, defective work corrected and all unsatisfactory conditions remedied.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.01 PROTECTION OF PERSONS AND PROPERTY

- A. The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take all reasonable precautions to prevent damage, injury or loss to: workers, persons nearby who may be affected, the Work, materials and equipment to be incorporated, and existing property at the site or adjacent thereto. The Contractor shall give notices and comply with applicable laws ordinances, rules regulations, and lawful orders of public authorities bearing on the safety of persons and property and their protection from injury, damage, or loss. The Contractor shall promptly remedy damage and loss to property at the site caused in whole or in part by the Contractor, a Subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.
- B. The Contractor shall notify the Owner in the event any existing hazardous material such as lead, PCBs, asbestos, etc. is encountered on the project. The Owner will arrange with a qualified specialist for the identification, testing, removal, handling and protection against exposure or environmental pollution, to comply with applicable regulation laws and ordinances. The Contractor and Architect will not be required to participate in or to perform this operation. Upon completion of this work, the Owner will notify the Contractor and Architect in writing the area has been cleared and approved by the authorities in order for the work to proceed. The Contractor shall attach documentation from the authorities of said approval.
- C. As required in the Hazardous Chemical Information Act of June 1984, all vendors supplying any materials that may be defined as hazardous, must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it has a warning caution on the label relating to a potential physical or health hazard, if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation. Material Safety Data Sheets must be provided directly to the Owner along with the shipping slips that include those products.
- D. The Contractor shall certify to the Owner that materials incorporated into the Work are free of all asbestos. This certification may be in the form of Material Safety Data Sheet (MSDS) provided by the product manufacturer for the materials used in construction, as specified or as provided by the Contractor.

ARTICLE 11: INSURANCE AND BONDS

11.01 INSURANCE AND BONDS

- A. The Contractor shall carry all insurance required by law, such as Unemployment Insurance, etc. The Contractor shall carry such insurance coverage as they desire on their own property such as a field office, storage sheds or other structures erected upon the project site that belong to them and for their own use. The Subcontractors involved with this project shall carry whatever insurance protection they consider necessary to cover the loss of any of their personal property, etc.
- B. Upon being awarded the Contract, the Contractor shall obtain a minimum of two (2) copies of all required insurance certificates called for herein, and submit one (1) copy of each certificate, to the Owner, within 20 days of contract award.
- C. Bodily Injury Liability and Property Damage Liability Insurance shall, in addition to the coverage included herein, include coverage for injury to or destruction of any property arising out of the collapse of or structural injury to any building or structure due to demolition work and evidence of these coverages shall be filed with and approved by the Owner.
- D. The Contractor's Property Damage Liability Insurance shall, in addition to the coverage noted herein, include coverage on all real and personal property in their care, custody and control damaged in any way by the Contractor or their Subcontractors during the entire construction period on this project.
- E. Builders Risk (including Standard Extended Coverage Insurance) on the existing building during the entire construction period, shall not be provided by the Contractor under this contract. The Owner shall insure the existing building and all of its contents and all this new alteration work under this contract during entire construction period for the full insurable value of the entire work at the site. Note, however, that the Contractor and their Subcontractors shall be responsible for insuring building materials (installed and stored) and their tools and equipment whenever in use on the project, against fire damage, theft, vandalism, etc.
- F. Certificates of the insurance company or companies stating the amount and type of coverage, terms of policies, etc., shall be furnished to the Owner, within 20 days of contract award.
- G. The Contractor shall, at their own expense, (in addition to the above) carry the following forms of insurance:
 - 1. Contractor's Contractual Liability Insurance
Minimum coverage to be:
 - Bodily Injury\$ 500,000for each person
 - \$1,000,000for each occurrence
 - \$1,000,000aggregate
 - Property Damage\$ 500,000for each occurrence
 - \$1,000,000aggregate
 - 2. Contractor's Protective Liability Insurance
Minimum coverage to be:
 - Bodily Injury\$ 500,000for each person
 - \$1,000,000for each occurrence
 - \$1,000,000aggregate
 - Property Damage\$ 500,000for each occurrence
 - \$ 500,000aggregate
 - 3. Automobile Liability Insurance

Minimum coverage to be:

Bodily Injury\$ 1,000,000for each person

\$ 1,000,000for each occurrence

Property Damage\$ 500,000per accident

4. Prime Contractor's and Subcontractors' policies shall include contingent and contractual liability coverage in the same minimum amounts as 11.7.1 above.
5. Workmen's Compensation (including Employer's Liability):
 - a. Minimum Limit on employer's liability to be as required by law.
 - b. Minimum Limit for all employees working at one site.
6. Certificates of Insurance must be filed with the Owner guaranteeing fifteen (15) days prior notice of cancellation, non-renewal, or any change in coverages and limits of liability shown as included on certificates.
7. Social Security Liability
 - a. With respect to all persons at any time employed by or on the payroll of the Contractor or performing any work for or on their behalf, or in connection with or arising out of the Contractor's business, the Contractor shall accept full and exclusive liability for the payment of any and all contributions or taxes or unemployment insurance, or old age retirement benefits, pensions or annuities now or hereafter imposed by the Government of the United States and the State or political subdivision thereof, whether the same be measured by wages, salaries or other remuneration paid to such persons or otherwise.
 - b. Upon request, the Contractor shall furnish Owner such information on payrolls or employment records as may be necessary to enable it to fully comply with the law imposing the aforesaid contributions or taxes.
 - c. If the Owner is required by law to and does pay any and/or all of the aforesaid contributions or taxes, the Contractor shall forthwith reimburse the Owner for the entire amount so paid by the Owner.

ARTICLE 12: UNCOVERING AND CORRECTION OF WORK

12.01 UNCOVERING AND CORRECTION OF WORK

- A. The Contractor shall promptly correct Work rejected by the Owner or failing to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed or completed, and shall correct any Work found to be not in accordance with the requirements of the Contract Documents within a period of two years from the date of Substantial Completion, or by terms of an applicable special warranty required by the Contract Documents. The provisions of this Article apply to work done by Subcontractors as well as to Work done by direct employees of the Contractor.
- B. At any time during the progress of the work, or in any case where the nature of the defects shall be such that it is not expedient to have them corrected, the Owner, at their option, shall have the right to deduct such sum, or sums, of money from the amount of the contract as they consider justified to adjust the difference in value between the defective work and that required under contract including any damage to the structure.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.01 CUTTING AND PATCHING

- A. The Contractor shall be responsible for all cutting and patching. The Contractor shall coordinate the work of the various trades involved.

13.02 DIMENSIONS

- A. All dimensions shown shall be verified by the Contractor by actual measurements at the project site. Any discrepancies between the drawings and specifications and the existing conditions shall be referred to the Owner for adjustment before any work affected thereby has been performed.

13.03 LABORATORY TESTS

- A. Any specified laboratory tests of material and finished articles to be incorporated in the work shall be made by bureaus, laboratories or agencies approved by the Owner and reports of such tests shall be submitted to the Owner. The cost of the testing shall be paid for by the Contractor.
- B. The Contractor shall furnish all sample materials required for these tests and shall deliver same without charge to the testing laboratory or other designated agency when and where directed by the Owner.

13.04 ARCHAEOLOGICAL EVIDENCE

- A. Whenever, in the course of construction, any archaeological evidence is encountered on the surface or below the surface of the ground, the Contractor shall notify the authorities of the Delaware Archaeological Board and suspend work in the immediate area for a reasonable time to permit those authorities, or persons designated by them, to examine the area and ensure the proper removal of the archaeological evidence for suitable preservation in the State Museum.

13.05 GLASS REPLACEMENT AND CLEANING

- A. The General Contractor shall replace without expense to the Owner all glass broken during the construction of the project. If job conditions warrant, at completion of the job the General Contractor shall have all glass cleaned and polished.

13.06 WARRANTY

- A. For a period of two (2) years from the date of Substantial Completion, as evidenced by the date of final acceptance of the work, the contractor warrants that work performed under this contract conforms to the contract requirements and is free of any defect of equipment, material or workmanship performed by the contractor or any of his subcontractors or suppliers. However, manufacturer's warranties and guarantees, if for a period longer than two (2) years, shall take precedence over the above warranties. The contractor shall remedy, at his own expense, any such failure to conform or any such defect. The protection of this warranty shall be included in the Contractor's Performance Bond.

ARTICLE 14: TERMINATION OF CONTRACT

14.01 TERMINATION OF CONTRACT

- A. If the Contractor defaults or persistently fails or neglects to carry out the Work in accordance with the Contract Documents or fails to perform a provision of the Contract, the Owner, after seven days written notice to the Contractor, may make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. Alternatively, at the Owner's option, and the Owner may terminate the Contract and take possession of the site and of all materials, equipment, tools, and machinery thereon owned by the Contractor and may finish the Work by whatever method the Owner may deem expedient. If the costs of finishing the Work exceed any unpaid compensation due the Contractor, the Contractor shall pay the difference to the Owner.

- B. "If the continuation of this Agreement is contingent upon the appropriation of adequate state, or federal funds, this Agreement may be terminated on the date beginning on the first fiscal year for which funds are not appropriated or at the exhaustion of the appropriation. The Owner may terminate this Agreement by providing written notice to the parties of such non-appropriation. All payment obligations of the Owner will cease upon the date of termination. Notwithstanding the foregoing, the Owner agrees that it will use its best efforts to obtain approval of necessary funds to continue the Agreement by taking appropriate action to request adequate funds to continue the Agreement."

END OF GENERAL REQUIREMENTS

SECTION 00 9500
GENERAL AND SPECIAL INSTRUCTIONS

PART 1 - GENERAL

1.01 GENERAL INSTRUCTIONS TO BIDDERS

- A. The general rules and conditions which follow apply to all purchases and become a part of each contract or purchase order
 - 1. Before submitting its bid, the bidder must review all instructions and specifications.
 - 2. A bidder's misinterpretation or ignorance of such instructions or specifications will not excuse the bidder from complying with the instructions and specifications.
 - 3. The bidder must also review applicable state laws. If these instructions or the bid specifications are inconsistent with state law, state law shall control.

1.02 DEFINITIONS:

- A. "District" refers to the Brandywine School District.

1.03 BID PROPOSALS

- A. Use the enclosed Proposal Form in submitting a Bid Proposal. The Bid Proposal must be dated and signed by an authorized representative of the bidder.
- B. Refer to Section 001000, INSTRUCTIONS TO BIDDERS, for additional information.

1.04 "RFP" - REQUESTS FOR PROPOSALS: N/A

1.05 PRE-BID MEETINGS: REQUIRED

1.06 DELIVERY OF BID PROPOSALS

- A. Sealed Bid Proposal must be received at the address listed in the Advertisement for Bid notice, prior to the time set for the Bid Opening. It is the responsibility of the Bidder to make certain that the Bid Proposal is in the location designated above prior to the time set for the Bid Opening. The District accepts no responsibility for any bid entrusted to the United States Postal Service, or any other delivery service or company. Bid Proposals not received in the designated location by the time set for the Bid Opening will not be considered.

1.07 BID OPENING

- A. Bids will be publicly opened at the designated location at the time designated on the Proposal Form, and in the Advertisement for Bids. The purpose of the opening is to reveal the names of those bidders submitting proposals. The opening is not to serve as a forum for determining the responsiveness of each bid, or the apparent low bidder. The aggregate amount of each bid shall be disclosed. Additional information shall be disclosed at the discretion of the District.

1.08 POLICY AND PROCEDURE FOR THE EXAMINATION AND COPYING OF PUBLIC RECORDS

- A. Title 29 § 10003 Delaware Code Freedom of Information Act
 - 1. All public records shall be open to inspection and copying by any citizen of the State during regular business hours by the custodian of the records for the appropriate public body. Reasonable access to and reasonable facilities for copying of these records shall not be denied to any citizen. If the record is in active use or in storage and, therefore, not available at the time a citizen requests access, the custodian shall so inform the citizen and make an appointment for said citizen to examine such records as expediently as they may be made available. Any reasonable expense involved in the copying of such records shall be levied as a charge on the citizen requesting such copy.

2. It shall be the responsibility of the public body to establish rules and regulations regarding access to public records as well as fees charged for copying of such records. (60 Del. Laws, c. 641 § 1.)
- B. Examination of Contract File
 1. Any citizen of the State or bidder may review the contract file only after making an appointment to do so with the District. Requests to review the records during an unannounced office visit may be denied if department personnel are busy, or if the file is in active use. Trade secrets and commercial or financial information of a privileged or confidential nature shall not be deemed public.
- C. Requests for Bid Tabulations
 1. Copies of bid tabulation may be obtained from the District either by mail after receipt of a written request and a self-addressed and stamped envelope, or by making an appointment to pick up copies that will be left at the Receptionist's desk. Bid tabulation and/or contract information other than the name of the successful bidder will not be given out over the telephone. Requests for bid tabulations during an unannounced office visit may be denied if work flow of department personnel will be disrupted.
- D. Copying Fees
 1. The District reserves the right to charge a reasonable fee for the copying of any public record. Such charges must be paid to the District prior to receiving the copies.

1.09 STATUS OF PROPOSALS

- A. Unless otherwise stated in the Special Instructions or on the Proposal Form, the Proposal submitted by bidders shall be binding for a period of 60 days from the date the bids are opened. Requests for Proposals shall be binding for a period of 90 days.
- B. Bids may be withdrawn up to the time of the bid opening upon request of the bidder. Such a request must be in writing and received by the District prior to the time stated for the bid opening. Timely requests submitted by facsimile or telegram will be honored.
- C. Waiver - The District reserves the right to waive any failure to conform to the instructions or specifications if the waiver: (1) does not involve a mandatory statutory requirement; (2) does not provide a competitive advantage to one or more bidders; and (3) is in the best interest of the District.
- D. Bidders may take exception to the terms and conditions of the instructions and/or specifications. Exceptions must be submitted prior to the opening of bids. Exceptions that do not conform to State bid law and/or create inequality in the treatment of bidders will be rejected. The bid of a bidder taking exception may be rejected if the District rejects the exception.

1.10 AWARDING OF BIDS

- A. The District reserves the right to award the bid to the lowest qualified bidder meeting specifications by item, in total, or any other method, whichever is deemed by the District to be in its best interest.
- B. The District reserves the right to award the bid to 2 or more firms if the advertisement for bids notifies bidders of the right of the District to make such an award and the criteria for such an award.
- C. The District reserves the right to reject any and all bids, in whole or in part, to make partial awards, to waive any irregularity, to reasonably increase or decrease quantities where estimated quantities are shown or where definite quantities are shown, and may reject any bid

which indicates any omission, contains alteration of form or additions not requested or imposes conditions, or where the individual bidder should receive a total award of less than \$500.00, or offers alternate items, and make any award which is deemed to be in the best interest of the District.

- D. In the event of tie bids, the District will decide which bidder is to be awarded the contract by any criteria of its choice.
- E. The contract shall be awarded by the District and its Board(s) within 60 days after the opening of bids. Failure to do so shall be cause for rejection of all bids. Responses to Requests for Proposals shall be awarded within 90 days after the opening of Proposals. Failure to do so shall be cause for rejection of all proposals.

1.11 BID DEPOSIT REQUIRED

1.12 FORMAL CONTRACT AND/OR PURCHASE ORDER

- A. The successful bidder shall execute the formal contract, within twenty (20) days after the award of the contract. No bidder or Vendor is to begin any work until it receives a State of Delaware Purchase Order signed by two authorized representatives of the District, properly processed through the State of Delaware Accounting Office. The Purchase Order shall serve as the authorization to proceed with work in accordance with the bid specifications and the special instructions.
- B. The formal contract or purchase order shall incorporate by reference these General Instructions, as well as the Special Instructions and Specifications and the bidder's Proposal.

1.13 PERFORMANCE AND PAYMENT BONDS REQUIRED

1.14 FAILURE TO COMPLY WITH CONTRACT: NEW AWARD: SUPERVISION

- A. If any person entering into a contract under the authority of this chapter neglects or refuses to perform it or fails to comply with the terms thereof, the District will terminate the contract and proceed to award a new contract in accordance with the provisions of Chapter 69, Title 29 of the Delaware Code, or may require the surety on the performance bond to complete the contract in accordance with the terms of the performance bond.
- B. Should a contractor/supplier fail to perform under the conditions of this contract, the District reserves the right to purchase the item or items on the open market and charge to the contractor/supplier or deduct from any monies owed the contractor/supplier, the difference between the bid price and the purchase price. However, no such action will be taken without first notifying the contractor/supplier by certified letter and giving him reasonable time to reply, but in no event longer than 10 days from the mailing of the certified letter. Failure to supply items as bid may be cause for removal of a bidder from our vendor bid list.

1.15 PREFERENCE FOR DELAWARE LABOR: STIPULATION IN CONTRACT

- A. In the construction of all public works for the State or any political subdivision thereof, or by persons contracting with the State or any political subdivision thereof, preference in employment of laborers, workmen or mechanics, shall be given to bona fide legal citizens of the State, who have established citizenship by residence of at least ninety days in the State. Any person, company or corporation who violates the provisions of this section shall pay a penalty to the Secretary of Finance equal to the amount of compensation paid to any person in violation of this section. (per Delaware Code, Title 29, Chapter 69, Section 6962, Paragraph (d) Subsection (4)b)

1.16 NON-DISCRIMINATION

- A. In performing this work the successful bidder agrees to the following:
- B. The successful bidder will not discriminate against any employee or application for employment because of race, creed, color, sex, national origin, age or disability. The vendor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, sex, national origin, age or disability. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer; recruitment; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
- C. The successful bidder will, in all solicitations or advertisements for employees place by or on behalf of himself, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, national origin, age or disability.

1.17 EQUAL OPPORTUNITY EMPLOYER

- A. The School District is an equal opportunity employer and does not discriminate or deny services on the basis of race, color, creed, national origin, sex, disability, or age.

1.18 INSURANCE - LIABILITY

- A. The successful bidder shall maintain, at its expense, the following insurance:
 - 1. Public Liability and Automobile Liability Insurance
 - a. The policy is to be provided for both the owner and the contractor.
 - b. Minimum coverage for bodily injury shall be \$500,000 for any one individual and \$1,000,000 for any one accident.
 - c. Minimum coverage for property damage shall be \$500,000 for any one accident.
 - d. Policies shall include completed operations, owners and contractors Protective Liability and Contractual Liability coverage, including protection against claims arising out of the activities of subcontractors in the same minimum amounts stated above.
 - e. If the project involves excavations, deep trenching, or blasting, endorsements to the policy should be obtained to cover these hazards.
 - f. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days' notice prior to cancellation.
 - 2. Builders Risk Policy
 - a. The builders risk policy shall be an all risk coverage policy.
 - b. The policy shall be in the name of the owner and prime contractor, jointly, "as their interests may appear."
 - c. On new construction or complete additions, the policy will be carried on a completed value basis.
 - d. On renovation projects, the policy will be covered by either an installation floater or a separate policy of sufficient dollar amount to fully cover the cost of the materials stored.
 - e. If it is your policy to pay for material not stored on the site, either a separate certificate of insurance must be issued or a rider must be added to the existing builders risk policy. The amount of coverage must be sufficient to cover all materials stored off the site.
 - f. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days' notice prior to cancellation.
 - 3. Worker's Compensation Including Employee's Liability

- a. Minimum limit on Employee's Liability to be \$100,000 minimum limit for all employees working at one site.
- b. Certificates of insurance must be filed with the owner guaranteeing fifteen (15) days' notice prior to cancellation.

1.19 LICENSES, FEES, PERMITS, TAXES, AND STATE LAWS AS APPLICABLE

- A. In the performance of this Contract the successful Bidder is required to comply with all applicable Federal, State, and Local laws, ordinances, codes, and regulations. The cost of permits, insurance, taxes, and other relevant costs required in the performance of the Contract shall be borne by the successful Bidder. All Delaware Laws in reference to construction shall be as binding as though quoted in full herein and their application shall be fully adhered to by all parties affected hereby. The vendor shall furnish upon request any or all of the referenced items.

1.20 WAGE SCALE - PREVAILING WAGE RATE

1.21 PATENTS, TRADEMARKS, AND COPYRIGHTS

- A. The supplier shall hold free of any liability, the School District and the officers and employees, of any costs or expenses arising from patent, trademark or copyright infringement incurred by use of any item supplied or process used in performance of this Contract.

1.22 COVENANT AGAINST CONTINGENT FEES

- A. The bidder warrants that no person or selling agency has been employed or retained to solicit or secure the Contract upon an agreement of understanding for a commission or percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the bidder for the purpose of securing business. For breach or violation of this warrantee the School District shall have the right to annul the Contract without liability or at its discretion to deduct from the contract price or otherwise recover the full amount of such commission, percentage, brokerage or contingent fees.

1.23 TAXES - EXEMPT

- A. Since the School District is exempt, prices quoted shall not include Federal taxes or State of Local taxes. Tax Exemption number is (Available from Owner).

1.24 TRADE DISCOUNTS

- A. All prices offered must be lowest net price after trade discounts have been considered.
- B. Bids offering a percentage off list prices will not be accepted unless;
 1. Specifically requested in that manner;
 2. A copy of the referenced price list accompanies the bid.

1.25 COMMERCIAL WARRANTEE AND GUARANTEE CERTIFICATE

- A. The supplier agrees that the supplies or services furnished under the Contract shall be covered by the most favorable commercial warranties the supplier gives to any customer for such supplies or services and that the rights and remedies provided herein are in addition to and do not limit any rights afforded to the District by any other clauses of the Contract. A final payment for performance shall not relieve the successful bidder of responsibility for faulty materials or workmanship.

1.26 INTERPRETATION OF SPECIFICATIONS

- A. Should any bidder be in doubt as to the intention and meaning of the specifications, he may make inquiry to the Architect. Questions received less than three working days before the

opening of bids may not be considered. All questions in order to be considered must be submitted in writing.

1.27 EXAMINATION OF SITE AND OTHER CONDITIONS BEARING ON THIS WORK

- A. Before submitting proposal, bidders shall fully inform themselves of the nature of the work by personal examination of the site and by such means as they consider necessary, as to matters, conditions, or considerations bearing on or in any way affecting the preparation of their proposal.
 - 1. A bidder shall not at any time after the submission of his proposal claim that there is any misunderstanding in regard to the location, extent, or nature of the work to be performed.
 - 2. No claims for any extra will be allowed because of alleged impossibilities in the production of the results specified, or because of inadequate or improper plans or specifications, and whenever a result is required, the successful bidder shall furnish any and all extras and make any changes needed to produce, to the satisfaction of the District, the required results at no expense to the District.
- B. Failure of the bidder to thoroughly understand all aspects of the solicitation before submitting their bid shall not be sufficient cause to permit withdrawal of its bid nor secure relief on pleas of error, after the contract is awarded.

1.28 BRAND NAMES AND APPROVED EQUAL

- A. Where a particular manufacturer or several manufacturers, brands or models are referenced, it is to be interpreted as indicating the type or quality of material, and shall be interpreted to include an "approved equal". Bids may be considered on models or brands or products of manufacturers other than those specified if the items being substituted were approved by the designee of the District.
- B. Where a manufacturer, brand, or model is referenced in the bid specifications, the absence of a reference to a different manufacturer, brand, or model in the bidder's proposal shall be interpreted as a bid on the manufacturer, brand, or model specified.
- C. Where several manufacturers or models are referenced as being equally acceptable and the bidder does not indicate what particular model or brand they are offering, the Designee of the District shall have the right to select any brand or model referenced.
- D. Only one bid per item will be considered. If a vendor submits more than one bid on an item, none of the vendor's bids on that item will be considered.
- E. The Board of Education of the District shall be the sole judge as to whether or not items submitted meet specifications or whether or not items being bid are equal. Any attempt to "resell" or disqualify other supplies while the proposals are being analyzed may be reason for your bid to be disqualified.
- F. All items furnished under the Contract must be new and unused, latest models (unless otherwise specified) and free from all defects. The foregoing exempts exchange, normal "rebuilt" items, where specified.

1.29 SAMPLES AND DESCRIPTIVE LITERATURE

- A. When requesting approval to bid models, brands or products of manufacturers other than those specified, such a request must be accompanied by catalog cuts and/or detailed specifications. The District may also request bidders to submit samples for examination and appraisal.
- B. Requested samples shall be submitted at no cost to the District and may be required by the District either prior to, at the time of the bid opening, or within ten calendar days following the request. Time of submission of samples shall be specified in the specifications. Samples shall

be specified in the specifications. Samples not provided as requested, will be reason to reject the bid for that item. All such samples shall be identified as to the supplier, model number, bid item number and other information that may be required; these samples will be returned after evaluation. Suppliers shall have the responsibility of picking up their samples within two weeks after notification. Samples not removed after two weeks will automatically become the property of the District at no charge.

1.30 RESPONSIBILITY FOR DAMAGE AND CARE OF SCHOOL PROPERTY

- A. The Supplier in the performance of this Contract will be held financially responsible for any damage to the grounds, buildings, or equipment caused by him, his subcontractors or employees, or other persons engaged in the performance of the Contract.
- B. Every reasonable effort shall be made by workmen to proceed with the work as described in these specifications in a manner accepted in trade circles as the highest level of workmanship. The successful bidder for this work shall be responsible for all damage to other work caused by his workmen or through the neglect of his workmen on the site.
- C. Workmanlike care shall be expected at all times in performing the work. It shall be the responsibility of the successful bidder to repair or replace all damaged property, the damage for which he or anyone working under his direction is responsible.

1.31 SUPPLIER CLEAN-UP

- A. All debris resulting from the supplier's delivery and installation shall be disposed of entirely by the supplier in an efficient and expeditious manner as required and directed by the District Designee. The successful bidder shall at all times keep the premises free from accumulation of waste materials or rubbish caused by his employees or work. District-owned trash receptacles are not to be used by the vendor without prior approval.

1.32 STORAGE OF MATERIALS

- A. Every effort shall be made by the successful bidder to schedule delivery of materials so that a minimum of storage space is required. The successful bidder shall not encumber the premises with his materials and shall store all materials in a place designated by the District or its representative. The District will not be responsible for any damage to or theft of tools or materials used in this work.

1.33 UNPACKING AND ASSEMBLING

- A. All work described in the specifications regarding unpacking, assembling, and placement of all movable furniture and/or equipment must be completed within five (5) days after furniture and/or equipment is received on the site unless prior approval is received.
- B. Any bidder failing to unpack and assemble knockdown equipment and furniture will be charged (deduction will be made from billing) a fee to cover the District's cost of unpacking and assembling.

1.34 SERVICE

- A. Each bidder may be required to submit a signed statement to the effect he can furnish service by factory trained personnel Monday to Friday during the hours of 8:00 a.m. - 4:00 p.m.

1.35 SCHEDULE FOR PERFORMANCE OF WORK

- A. All work described in these specifications must be completed with reasonable promptness. The District shall be the sole judge of what is "reasonably prompt" under the circumstances. If the successful bidder does not begin the work in a reasonable amount of time, it will be

notified that if it fails to initiate the work promptly, the contract may be terminated and the District will forthwith proceed to collect for nonperformance of the work.

1.36 ORDERING

- A. All items or services to be furnished under the Contract will be ordered by the issuance of a Purchase Order signed by two authorized representatives of the District. This document must be in the hands of the successful bidder prior to any work commencing on the Contract.

1.37 DELIVERY, INSPECTION, ACCEPTANCE, AND PACKAGING

- A. All supplies, materials, equipment, goods, and services are to be delivered postpaid to the location or locations indicated on the Proposal Form, Specifications, or Purchase Order. No labor will be provided to help unload any product under Contract.
- B. The delivery of goods or items furnished under the terms of the Contract shall not be considered as acceptance thereof until the goods are inspected. The District shall have a reasonable opportunity to inspect. If, for example, goods are delivered on August 1, the District may not have a reasonable opportunity to inspect such goods until September or October. In all events, shipping invoices or other documents sent with goods shall not be controlling with respect to the timing of inspection. The inspection and test by the District of any supplies or lots thereof does not relieve the supplier from any responsibility regarding defects or other failure to meet the Contract requirements, which may be discovered subsequent to delivery. Except as otherwise provided in the Contract, acceptance shall be conclusive except as regards to patent defects, fraud, or such gross mistakes as amount to fraud.
- C. Any item to be supplied as a result of this Contract shall be subject to inspection and test by the Ordering Office, to the extent practicable, at all times and places including the period of manufacture and in any event prior to acceptance.
- D. In case any item or lots of items are found to be defective in material or workmanship or otherwise not in conformity with the requirements of the Contract, the Ordering Office shall have the right to either reject them (with or without instructions as to their disposition) or to require their correction. Items or lots of items which have been rejected or required to be corrected shall be removed or, if required by the Ordering Office as they may deem appropriate, corrected in place by and at the expense of the supplier promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If the supplier fails to promptly remove such items or lots of items which are required to be removed, or promptly to replace or correct such items or lots of items, the District either (1) may re-contract or otherwise, replace or correct such items and charge the supplier the cost occasioned the District thereby, or (2) may terminate the Contract for default as provided in the clause of the Contract entitled "Failure to comply with Contract".
- E. Acceptance or rejection of any items shall be made as promptly as practicable after delivery, except as otherwise provided in the Contract; but failure to inspect and accept or reject items shall neither relieve the supplier from responsibility for such items as are not in accordance with the Contract requirements nor impose liability on the District therefore.
- F. Neither the School District nor other Ordering Office will assume responsibility for damage to any rejected delivery caused by weather, improper warehousing, or mishandling.
- G. All outer packs of items delivered under the Contract (except subsistence items delivered to cafeterias) must be marked with the Purchase Order/Contract number and item identification.
 - 1. Failure to provide adequate identifying markings may result in refusal of the delivery.

- H. Unless otherwise stated, all prices include delivery and placement within the ship-to-address in that area specified in the Contract or Purchase Order.
- I. Collect shipments will not be accepted.
- J. All shipments shall be F.O.B. point of destination as indicated in the Proposal or on the Purchase Order.

1.38 INVOICES

- A. Invoices must be completely identifiable, supported by delivery receipts where specified, and contain the following minimum information:
 - 1. Purchase Order/Contract number.
 - 2. Delivery destination as it appears on the Purchase Order.
 - 3. Contract item number, quantity and description of item billed.
 - 4. Unit price and extended price of each item.
 - 5. Total amount of invoice.
 - 6. Any prompt payment discount offered.

1.39 INDEMNIFICATION

- A. By submitting a bid, all bidders agree that in the event they are awarded a contract, they will indemnify and otherwise hold harmless the District, its agents and employees from any and all liability, suits, actions or claims, together with all costs, expenses or attorneys' fees, arising out of their performance of work or supplying materials and services in connection with the contract. This agreement to indemnify and hold harmless shall cover all suits, actions, claims or liabilities asserted against the District, its agents and employees, regardless of whether such suits, actions, claims or liabilities are based upon acts or failures to act attributable to the District or its employees or agents, to the extent that it shall be also determined that the acts, or failure to act are attributable, in whole or in part, to such bidders or its employees or agents.

1.40 ASSIGNMENT OF ANTITRUST CLAIMS

- A. As consideration for the award and execution by the Board(s) of this contract, the successful bidder hereby grants, conveys, sells, assigns, and transfers to the State of Delaware all of its right, title and interest in and to all known or unknown causes of action it presently has or may now or hereafter acquire under the antitrust laws of the United States and the State of Delaware, relating to the particular goods or services purchased or acquired by the Board(s) pursuant to this contract.

1.41 HAZARDOUS MATERIALS

- A. As required in the Hazardous Chemical Information Act of June, 1984, all vendors supplying any materials that may be defined as hazardous must provide Material Safety Data Sheets for those products. Any chemical product should be considered hazardous if it is known to be present in the work place, and if employees may be exposed under normal conditions or in any foreseeable emergency situation.
- B. Material Safety Data Sheets must be provided directly to each School along with the shipping slips that includes those products.

1.42 CONTRACT DOCUMENTS

- A. These General Instructions and any Special Instructions, Bid Specifications, Requests for Bid, Bid Proposal Form, Purchase Order, and Contract shall be a part of and constitute the contract entered into by the District and any successful bidder. In the event there is any discrepancy between any of the foregoing contract documents, the following order of documents governs so

that the former prevails over the latter: Contract, Purchase Order, Bid Specifications, Special Instructions, General Instructions, Requests for Bid and Bid Proposal Form.

1.43 THE CONTRACT

- A. This Contract shall be governed by Delaware law, and any dispute concerning the interpretation or application of this Contract, and any documents incorporated by reference into this Contract, or any materials supplied or work performed under this Contract must be heard in Delaware.

1.44 TRANSFER OF BIDS

- A. The District named in this bid and the successful bidder may reach an agreement to make available to any agency or school district in the State the bid prices submitted for this contract. Where such an agreement exists, the District named shall have access to purchase under the contract.

1.45 CONTRACT REQUIREMENTS:

- A. This contract will be issued to cover the General requirements for multiple locations of the District, as noted in this project manual and drawings.

1.46 CONTRACT PERIOD:

- A. Each vendor's contract shall be valid for a period from Authorization to Proceed through completion.

1.47 PRICES

- A. Prices will remain firm for the term of the contract.

1.48 MANDATORY INSURANCE REQUIREMENTS

- A. Before any work is done hereunder, the Certificate of Insurance and/or copies of the insurance policies, referencing the contract number stated herein, shall be filed with the State. The certificate holder is as follows:

As required in Section 009000

1.49 BASIS OF AWARD:

- A. The Owner shall award this contract to the lowest responsible and responsive bidder(s) who best meets the terms and conditions of the bid. .
- B. The Owner reserves the right to reject any or all bids in whole or in part, to make multiple awards, partial awards, award by types, item by item, or lump sum total, whichever may be most advantageous to the District.

1.50 HOLD HARMLESS:

- A. The successful bidder agrees that it shall indemnify and hold the District and all its agencies harmless from and against any and all claims for injury, loss of life, or damage to or loss of use of property caused or alleged to be caused by acts or omissions of the successful bidder, its employees, and invitees on or about the premises and which arise out of the successful bidder's performance, or failure to perform as specified in the Agreement.

1.51 NON-PERFORMANCE:

- A. In the event the vendor does not fulfill its obligations under the terms and conditions of this contract, the ordering agency may purchase equivalent product on the open market any difference in cost between the contract prices herein and the price of open market product shall be the responsibility of the vendor. Under no circumstances shall monies be due the vendor in

the event open market products can be obtained below contract cost. Any monies charged to the vendor may be deducted from an open invoice.

1.52 PAYMENT:

- A. The agencies or school districts involved will authorize and process for payment each invoice within thirty (30) days after the date of receipt.

1.53 ALTERNATE BIDS AND SUBSTITUTIONS:

- A. All alternate bids/substitutions must be accompanied with the following information for each item in order to be considered for award.
 - 1. Completed bid forms
 - 2. Written list, stating deviations from specified product.
 - 3. Product literature and manufacturers specifications.
 - 4. Warranty Information.
- B. All vendors should also be prepared to provide a sample of the exact item bid for evaluation purposes within 48 hours of a request to provide this information. Failure of a vendor to meet any of these terms will result in an automatic rejection of the vendor's bid for items that do not comply with these requirements.
- C. The District and the Architect reserve sole discretion on the final selections based on any and all criteria and any or all General Conditions, Special Instructions or Supplementary Conditions.

1.54 QUANTITIES:

- A. Quantities listed in this Specification are the anticipated needs for this contract. Except where budget constraints would prohibit ordering those quantities, the quantities stated are, to the best of the District's knowledge, the minimum amounts. The right to increase or decrease quantities is reserved and the unit price quoted on the bid form shall remain as quoted for the contract period.

1.55 PUNCH LIST:

- A. Vendor(s) shall complete punch list items in a timely manner. Final payment will not be issued until punch list items are complete to Owner's satisfaction

END OF SECTION

SECTION 01 1000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Brandywine High School Renovations Phase 1 - General Trades Package.
- B. Owner's Name: Brandywine School District.
- C. Architect's Name: ABHA Architects, Inc..
- D. The Project consists of the alteration of Brandywine High School.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 5200 - Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of alterations work is indicated on drawings.
- B. Renovate the following areas, complete including operational mechanical and electrical work and finishes:
 - 1. Main Entrance / Front Elevation.
 - 2. Breezeway.
 - 3. Courtyard.
 - 4. Chiller Fencing / Accoustic Wall.
 - 5. Roofing of Stage and Support Areas.
 - 6. Second Floor Cooridor Doors.
- C. Plumbing: Alter existing system and add new construction, keeping existing in operation.
- D. HVAC: Alter existing system and add new construction, keeping existing in operation.
- E. Electrical Power and Lighting: Alter existing system and add new construction, keeping existing in operation.
- F. Fire Suppression Sprinklers: Alter existing system and add new construction, keeping existing in operation.
- G. Fire Alarm: keeping existing in operation.
- H. Telephone: keeping existing in operation.
- I. Security System: keeping existing in operation.

1.04 WORK BY OWNER

- A. Owner has awarded a contract for supply and installation of abatement, windows, limestone sills, painting of lintels, and window treatment which commenced in April.

1.05 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy a certain portion of the Project prior to the completion date for the conduct of normal operations.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site and premises to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
- C. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- D. Utility Outages and Shutdown:
 - 1. Limit disruption of utility services to hours the building is unoccupied.
 - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days notice to Owner and authorities having jurisdiction.
 - 3. Prevent accidental disruption of utility services to other facilities.

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.

1.02 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand will not be accepted.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Execute certification by signature of authorized officer.
- E. Submit one electronic and three hard-copies of each Application for Payment.
- F. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.04 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 5 days.
- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.

END OF SECTION

SECTION 01 2200
UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.

1.02 RELATED REQUIREMENTS

- A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 MEASUREMENT OF QUANTITIES

- A. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
- B. Measurement by Area: Measured by square dimension using mean length and width or radius.

1.05 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

1.06 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not conforming to specified requirements.

1.07 SCHEDULE OF UNIT PRICES

- A. Item: Stucco Repair; Section 09 2405 Stucco Repair.
- B. Item: Gypsum Plaster Repair; Section 09 2300 Gypsum Plaster.
- C. Item: Gypsum Wall Board Repair; Section 09 2116 Gypsum Board Assemblies.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2300
ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.

1.02 RELATED REQUIREMENTS

- A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.

1.03 ACCEPTANCE OF ALTERNATES

1.04 SCHEDULE OF ALTERNATES

- A. Alternate No. 1 - CHILLER ACCOUSTIC WALL / FENCE ENCLOSURE.:
- B. Alternate No. 2 - SECOND FLOOR CORRIDOR DOORS:
- C. Alternate No. 3 - COURTYARD - DEMOLITION:
- D. Alternate No. 4 - COURTYARD - NEW CONSTRUCTION (CONCRETE):
- E. Alternate No. 4A - COURTYARD - NEW CONSTRUCTION (PAVERS).
- F. Alternate No. 5 - ROOFING AT THEATER STAGE AND SUPPORT SPACES.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

2.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
- D. Limit each request to a single proposed substitution item.

2.02 RESOLUTION

2.03 ACCEPTANCE

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Submittals for review, information, and project closeout.
- G. Number of copies of submittals.
- H. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 00 7200 - General Conditions: Dates for applications for payment.
- B. Section 01 6000 - Product Requirements: General product requirements.
- C. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Conform to requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Interpretation (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Schedule meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.

3. Contractor.

C. Agenda:

1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract, Contractor, Owner, and Architect.
6. Coordination with Abatement, Window, Masonry Sill, and Owner contractors.
7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.

3.02 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum weekly intervals.

B. Attendance Required:

1. Contractor.
2. Owner.
3. Architect.
4. Contractor's superintendent.
5. Major subcontractors.

C. Agenda:

1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Corrective measures to regain projected schedules.
7. Planned progress during succeeding work period.
8. Maintenance of quality and work standards.
9. Effect of proposed changes on progress schedule and coordination.
10. Other business relating to work.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

3.04 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:

1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.05 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in conformance to requirements of Section 01 7800 - Closeout Submittals:
 - 1. Project record documents.
 - 2. Operation and maintenance data.
 - 3. Warranties.
 - 4. Bonds.
 - 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Small Size Sheets, Not Larger Than 8-1/2 by 11 inches: Submit the number of copies that Contractor requires, plus two copies that will be retained by Architect.
- B. Documents for Information: Submit two copies.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 - 1. After review, produce duplicates.
 - 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.08 SUBMITTAL PROCEDURES

- A. General Requirements:
 - 1. Use a single transmittal for related items.
 - 2. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.

3. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
 4. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
 5. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
 - a. Deliver submittals to Architect at business address.
 6. Schedule submittals to expedite the Project, and coordinate submission of related items.
- B. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related work.
 2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- C. Samples Procedures:
1. Transmit related items together as single package.
 2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.

3.09 SUBMITTAL REVIEW

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
- D. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
 - a. "Approved", or language with same legal meaning.
 - b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
 - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
 - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
 2. Not Authorizing fabrication, delivery, and installation:
- E. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
 - a. "Received" - to notify the Contractor that the submittal has been received for record only.
 2. Items for which action was taken:
 - a. "Reviewed" - no further action is required from Contractor.

END OF SECTION

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Temporary sanitary facilities.
- B. Temporary Controls: Barriers, enclosures, and fencing.
- C. Construction Aids
- D. Vehicular access and parking.
- E. Traffic Regulation
- F. Waste removal facilities and services.
- G. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 01 5100 - Temporary Utilities.

1.03 TEMPORARY UTILITIES - SEE SECTION 01 5100

1.04 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
 - 1. Temporary facilities shall be used by all phase 1 contractors.
- B. Maintain daily in clean and sanitary condition.

1.05 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Location:
 - 1. Enclose and secure all construction areas.
 - 2. Locate pedestrian entrance gates as required to provide controlled personnel entry, in suitable relation to construction parking facilities.

1.07 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.08 CONSTRUCTION AIDS

- A. Provide construction aids and equipment required to facilitate execution of the Work. Examples are scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes and other such facilities and equipment.
- B. Mutual use may be arranged by the Contractor where applicable.
- C. Elevators in the existing building and new elevators shall not be used by construction personnel.

1.09 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Maintain traffic areas free as possible of excavated materials, construction equipment, products, snow, ice and debris.
- F. Existing on-site roads may be used for construction traffic.
 - 1. Maintain existing road construction, and restore to original, or specified, condition at completion of Work.

1.10 WASTE REMOVAL

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site periodically.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

1.11 FIELD OFFICES

- A. Field office space will be available in unoccupied area of the facility.

1.12 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
 - 1. Remove stone from temporary access roads, unless it is to be incorporated into new work.
 - 2. Grade damaged areas of site to required elevations, spread topsoil, and re-seed.
- D. Restore existing facilities used during construction to original condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5500
VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Parking.
- B. Existing pavements and parking areas.
- C. Maintenance.
- D. Removal, repair.

PART 3 EXECUTION

2.01 PARKING

- A. Use of designated areas of existing parking facilities by construction personnel is permitted.

2.02 MAINTENANCE

- A. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

2.03 REMOVAL, REPAIR

- A. Repair existing facilities damaged by use, to original condition.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

- A. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- B. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.

3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 - Firestopping.

1.03 QUALIFICATIONS

- A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

1.04 PROJECT CONDITIONS

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.05 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.

- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.

- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- G. Clean site; sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 00 7200 - General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned , with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.

2. Addenda.
 3. Change Orders and other modifications to the Contract.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings : Legibly mark each item to record actual construction including:
1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 3. Field changes of dimension and detail.
 4. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
1. Description of unit or system, and component parts.
 2. Identify function, normal operating characteristics, and limiting conditions.
 3. Include performance curves, with engineering data and tests.
 4. Complete nomenclature and model number of replaceable parts.

- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- D. Prepare data in the form of an instructional manual.
- E. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 3 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- G. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- H. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

- I. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- J. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- K. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- L. Arrange content by products and systems under section numbers and sequence of Table of Contents of this Project Manual.
 - 1. Operating instructions.
 - 2. Maintenance instructions for equipment and systems.
 - 3. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
- M. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- C. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- D. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- E. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.03 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Site Plan: Showing:
 - 1. Areas for temporary construction and field offices.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 SCOPE

- A. Remove other items indicated, for salvage, relocation, recycling, and turnover to owner.
- B. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 2200.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Provide, erect, and maintain temporary barriers and security devices.

4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 5. Do not close or obstruct roadways or sidewalks without permit.
 6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- C. Remove existing work as indicated and as required to accomplish new work.
1. Remove items indicated on drawings.
- D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. Verify that abandoned services serve only abandoned facilities before removal.
 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch as specified for patching new work.

3.04 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.

- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 04 2000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.

1.02 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications; 2016.
- C. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2009a (Reapproved 2014).
- D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2017.
- E. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2016a.
- F. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2011.
- G. ASTM C150/C150M - Standard Specification for Portland Cement; 2017.
- H. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- I. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.
- J. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- K. ASTM C476 - Standard Specification for Grout for Masonry; 2016.
- L. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units; 2016.
- M. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2016.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Samples: Submit four samples of decorative block units to illustrate color, texture, and extremes of color range.
- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depth of 8 inches.
 - 2. Special Shapes: Provide non-standard blocks configured for corners.
 - 3. Load-Bearing Units: ASTM C90, normal weight.
 - 4. Pre-Faced Units: ASTM C90, hollow block, with smooth resinous facing complying with ASTM C744.
 - a. Colors and styles: As indicated on drawings.

2.02 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
 - 1. Not more than 0.60 percent alkali.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Mortar Aggregate: ASTM C144.
- D. Grout Aggregate: ASTM C404.
- E. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
 - 1. Color(s): As selected by Architect from manufacturer's full range.
- F. Water: Clean and potable.

2.03 REINFORCEMENT AND ANCHORAGE

- A. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- B. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.
- C. Multiple Wythe Joint Reinforcement: Truss type; fabricated with moisture drip; ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/153M, Class B; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

2.04 FLASHINGS

- A. Stainless Steel/Polymer Fabric Drainage Plane Flashing: ASTM A240/A240M stainless steel sheet bonded with rubber-based adhesive between one sheet of polymer fabric and one sheet of non-woven drainage material, with manufacturer's standard, self adhering, stainless steel lap tape.
 - 1. Manufacturers:
 - a. York Manufacturing, Inc; Flash-Vent SS: www.yorkmfg.com.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.05 MORTAR AND GROUT MIXES

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 - 1. Masonry below grade and in contact with earth: Type S.
 - 2. Exterior, non-loadbearing masonry: Type N.
- B. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
- C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COLD AND HOT WEATHER REQUIREMENTS

- A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.
- B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

3.03 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:

3.04 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- D. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

3.05 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

3.06 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHER UNIT MASONRY

- A. Install horizontal joint reinforcement 16 inches on center.
- B. Lap joint reinforcement ends minimum 6 inches.
- C. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

3.07 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
- B. Extend metal flashings to within 1/4 inch of exterior face of masonry.

3.08 BUILT-IN WORK

- A. As work progresses, install built-in electrical boxes, conduits, and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.

3.09 TOLERANCES

- A. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- B. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- C. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- D. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

3.10 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution.

END OF SECTION

SECTION 04 7200
CAST STONE MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural cast stone.
- B. Units required are indicated on the drawings as "cast stone".
- C. Units required are:
 - 1. Courtyard wall caps as detailed on drawings.

1.02 RELATED REQUIREMENTS

- A. Section 04 2000 - Unit Masonry: Installation of cast stone in conjunction with masonry.
- B. Section 07 9200 - Joint Sealants: Sealing joints indicated to be left open for sealant.

1.03 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2017).
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2016.
- C. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 2016.
- D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement; 2014.
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2017.
- F. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2016, with Editorial Revision (2016).
- G. ASTM C150/C150M - Standard Specification for Portland Cement; 2017.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.
- I. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2017.
- J. ASTM C1364 - Standard Specification for Architectural Cast Stone; 2017.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Test results of cast stone components made previously by the manufacturer.
- C. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- D. Verification Samples: Pieces of actual cast stone components not less than 6 inches square, illustrating range of color and texture to be anticipated in components furnished for the project.
- E. Manufacturer's Qualification Data: Documentation showing compliance with specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications:

1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
2. Current producer member of the Cast Stone Institute or the Architectural Precast Association.
3. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.
- F. Store mortar materials where contamination can be avoided.
- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.01 ARCHITECTURAL CAST STONE

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural limestone, complying with ASTM C1364.
 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
 4. Color: Selected by Architect from manufacturer's full range.
 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings.
 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.

2.02 MATERIALS

- A. Portland Cement: ASTM C150/C150M.
 1. For Mortar: Type I or II, except Type III may be used in cold weather.
- B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D. Admixtures: ASTM C494/C494M.

- E. Water: Potable.
- F. Reinforcing Bars: ASTM A615/A615M deformed bars, galvanized.
 - 1. Galvanized in accordance with ASTM A767/A767M, Class I.
- G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- I. Mortar: Portland cement-lime, as specified in Section 04 0511; do not use masonry cement.
- J. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

- A. Install cast stone components in conjunction with masonry, complying with requirements of Section 04 2000.
- B. Mechanically anchor each cast stone unit.
- C. Setting:
 - 1. Drench cast stone components with clear, running water immediately before installation.
 - 2. Set units in a full bed of mortar unless otherwise indicated.
 - 3. Fill vertical joints with mortar.
 - 4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.
- D. Joints: Make all joints 3/8 inch, except as otherwise detailed.
 - 1. Rake mortar joints 3/4 inch for pointing.
 - 2. Remove excess mortar from face of stone before pointing joints.
 - 3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
 - 4. Leave the following joints open for sealant:
 - a. Head Joints in wall caps.
- E. Repairs: Repair chips and other surface damage noticeable when viewed in direct daylight at 20 feet.
 - 1. Repair with matching touchup material provided by the manufacturer and in accordance with manufacturer's instructions.
 - 2. Repair methods and results subject to Architect's approval.

3.03 CLEANING

- A. Clean completed exposed cast stone after mortar is thoroughly set and cured.
 - 1. Wet surfaces with water before applying cleaner.
 - 2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
 - 3. Remove cleaner promptly by rinsing thoroughly with clear water.
 - 4. Do not use acidic cleaners.

3.04 PROTECTION

- A. Protect completed work from damage.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION

SECTION 05 5000
METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated roof access ladders

1.02 RELATED REQUIREMENTS

- A. Section 09 9000 - Painting and Coating.

1.03 REFERENCE STANDARDS

- A. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements; 2008.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2013.
- E. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing; 2014.
- F. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015, with Errata (2016).
- G. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer; 1999 (Ed. 2004).
- H. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel Sections: ASTM A36/A36M.
- B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.
- C. Plates: ASTM A283/A283M.
- D. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- E. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- F. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.

- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- D. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FABRICATED ITEMS

- A. Ladders: Steel; in compliance with ANSI A14.3; with mounting brackets and attachments; galvanized finish.
 - 1. See drawings for details

2.04 FINISHES - STEEL

- A. Prime paint steel items.
 - 1. See Section 09 9000 - Painting and Coating.
- B. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.

3.04 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Rough opening framing for doors, windows, and roof openings.
- B. Roof-mounted curbs.
- C. Roofing nailers.
- D. Fire retardant treated wood materials.
- E. Miscellaneous framing and sheathing.
- F. Concealed wood blocking, nailers, and supports.
- G. Miscellaneous wood nailers, furring, and grounds.

1.02 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
- C. AWPA U1 - Use Category System: User Specification for Treated Wood; 2017.
- D. PS 20 - American Softwood Lumber Standard; 2015.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Lumber fabricated from old growth timber is not permitted.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6):

1. Grade: No. 2.

D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:

1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.

2.03 ACCESSORIES

A. Fasteners and Anchors:

1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

B. Fire Retardant Treatment:

1. Interior Type A: AWWA U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
 - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
 - b. Treat rough carpentry items as indicated .
 - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.

- D. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- E. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

3.03 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide wood curb at all roof openings except where specifically indicated otherwise. Form corners by alternating lapping side members.

3.04 TOLERANCES

- A. Framing Members: 1/4 inch from true position, maximum.
- B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

END OF SECTION

SECTION 06 2000
FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Finish carpentry items.
- B. Hardware and attachment accessories.
- C. Radiant heating bench seat.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 08 1416 - Flush Wood Doors.

1.03 ADMINISTRATIVE REQUIREMENTS

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide instructions for attachment hardware and finish hardware.
 - 2. Provide solid surface product data.
 - 3. Provide Impact Resistant Wall Covering product data.
 - 4. Provide aluminum grille product data.
- C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Provide detail drawing of bench seating as shown on drawings.
- D. Samples:
 - 1. Submit solid surface sample box for color selection.
 - 2. Submit impact resistant wall covering for color selection

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

- A. Interior Woodwork Items:
 - 1. Hardware and attachment accessories..
 - 2. Radiant heating bench seat..

2.02 WOOD-BASED COMPONENTS

- A. Wood fabricated from old growth timber is not permitted.

2.03 SOLID SURFACE

- A. Manufacturer: Corian by DuPont - www.corian.com
- B. Provide solid surface:
 - 1. Provide solid surface covering for existing channel for bench seat as detailed on drawings.

2. Provide solid surface bench as detailed on drawings.

2.04 IMPACT RESISTANT WALL COVERING

- A. Manufacturer: Rampart by Wolf Gordon - www.wolfgordon.com
- B. Provide Impact Resistant Covering on bench seating as detailed on drawings

2.05 ARCHITECTURAL GRILLES

- A. Manufacturer: Architectural Grille - www.archgrille.com
- B. Provide Bar Grille for bench seating as detailed on drawings.
 1. Material: Aluminum
 2. Grille: AG20D
 3. Size: 4 inches by 3 feet 6 inches
- C. Provide Perforated Grille for bench seating as detailed on drawings.
 1. Material: Aluminum
 2. Grille: 210 School Slot Perforated Grille
 3. Size: 7 inches by 3 feet 6 inches by 1/8 inch thick.

2.06 FASTENINGS

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Concealed Joint Fasteners: Threaded steel.

2.07 HARDWARE

- A. See Section - 87 7100 Door Hardware.

2.08 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.09 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

- A. Set and secure materials and components in place, plumb and level.
- B. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.03 TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

SECTION 07 2100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Refer to Scope Information Sheets for this contract bound in the Project Manual under Section 01 1000, Summary of Work. The Scope Information Sheets describe generally the work included in each contract, but the work is not necessarily limited to that described.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

- A. Section 05 4000 - Cold-Formed Metal Framing: Board insulation as wall sheathing.
- B. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation inside walls and partitions.

1.03 REFERENCE STANDARDS

- A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
- C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.05 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.
- B. Insulation above ceilings: Batt insulation with no vapor retarder.

2.02 BATT INSULATION MATERIALS

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.

2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
 4. Formaldehyde Content: Zero.
 5. Thickness: As indicated on drawings.
 6. Manufacturers:
 - a. CertainTeed Corporation; _____: www.certainteed.com.
 - b. Johns Manville; _____: www.jm.com.
 - c. Owens Corning Corp: www.owenscorning.com.
 7. Substitutions: See Section 01 6000 - Product Requirements.
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 2. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.
 3. Thickness: As indicated on drawings.
 4. Manufacturers:
 - a. Thermafiber, Inc; SAFB: www.thermafiber.com/#sle.
 - b. ROCKWOOL (ROXUL, Inc); COMFORTBATT: www.rockwool.com/#sle.
 - c. ROCKWOOL (ROXUL, Inc); AFB™: www.rockwool.com/#sle.
 - d. Substitutions: See Section 01 6000 - Product Requirements.

2.03 ACCESSORIES

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in exterior roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 4233

EXTERIOR SOLID PHENOLIC RAINSCREEN PANELS

PART 1 - GENERAL

1.01 SECTION INCLUDES:

- A. Exterior solid phenolic rain screen wall panels.
- B. Aluminum supporting substructure.

1.02 RELATED SECTIONS:

1.03 SYSTEM DESCRIPTION:

- A. AExterior Rain screen Assembly: Solid phenolic core, fire-retardant, exterior grade rain screen wall panels, aluminum substructure, attachment system components, and all accessories.

1.04 PERFORMANCE REQUIREMENTS:

- A. General Performance: Solid phenolic exterior rain screen wall panel system, aluminum substructure, and attachment accessories shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Delegated Design Engineering: Design solid phenolic exterior rain screen wall panel system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
 - 1. 1. Design shall be inclusive of aluminum support structure system and all attachment accessories.
 - 2. 2. Design shall be inclusive of solid phenolic exterior rain screen wall panel manufacturing and shall conform to Manufacturer's recommended installation procedures.
- C. Structural Performance: Provide solid phenolic exterior wall panel system capable of withstanding the effects of the following loads and stresses within limits and under conditions indicated based on Manufacturer's most current testing standards:
 - 1. Wind Loads: Provide exterior rain screen wall panel system, including aluminum support structure, capable of withstanding wind loads calculated according to requirements of authorities having jurisdiction.
- D. Deflection Limits: Aluminum support structure and exterior phenolic rain screen panel system shall be designed in accordance with the Manufacturer's recommended maximum deflection when tested under positive and negative design wind gust loads and shall withstand wind gust loads with horizontal deflections no greater than the Manufacturer's allowable span.
- E. Thermal Movements: Exterior solid phenolic rain screen panel system shall allow for thermal movements from ambient air and surface temperature changes by preventing buckling, opening of joints, over-stressing of components, failure of connections and other detrimental effects. Base calculations on surface temperature changes of materials due to both solar heat gain and nighttime-sky heat loss.
- F. Aluminum Support System: Provide aluminum support system capable of the following:
 - 1. 1. Design and install aluminum support structure to accommodate expected construction tolerances and misalignment, deflection of building structural components, and openings in the building enclosure as designed.

1.05 SUBMITTALS

- A. Product Data: For each type of product indicated. Include Manufacturer's written installation instructions, including recommendations for evaluating, preparing, and treating substrate, rain screen panel technical data, material descriptions, and finishes and tested physical and performance properties.
- B. Shop Drawings: Show fabrication and installation layouts of solid phenolic exterior rain screen panel, details of aluminum support structure conditions, anchorages for aluminum support structure, attachment system for panels, allowances for thermal expansion, trim, flashings, closures, corners, and accessories as required, and all special job specific details.
- C. Samples: For each type of exposed finish required, prepared on samples of size and type indicated below for approval:
 - 1. Rain screen Wall Panels: Minimum 4 inch by 4 inch including fasteners of each color.
 - 2. Aluminum Support Structure: 12-inch-long including fasteners and other accessories.
- D. Installer Qualification Data: For Installer, provide certification signed by solid phenolic rainscreen panel Manufacturer certifying that Installer complies with requirements to perform the work specified in this Section.
- E. Engineering Design Certification: Engineering design from solid phenolic rain screen panel Manufacturer.
 - 1. Structural Engineer: Licensed in the State of work to be completed.
 - 2. Completed calculations.
- F. Closeout Submittals: From solid phenolic panel rain screen panel Manufacturer, provide the following:
 - 1. Operation and Maintenance Data: Operation and maintenance manuals including methods for maintaining installed products, replacing damaged panels, and precautions against cleaning materials and methods detrimental to finishes and performance.
 - 2. Warranty: 10 year limited warranty for solid phenolic exterior rain screen wall panel system. Warranty shall be inclusive of material and labor for removal and reinstallation.

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: A firm experienced in the installation of exterior rain screen wall panel systems who has a minimum of 3 years experience.
- B. Fabricator Qualifications: A shop that employs skilled workers who custom fabricate solid phenolic or similar exterior rain screen wall panel systems to those required for this Project and who is certified by the Manufacturer.
- C. Source Limitations: Obtain solid phenolic rain screen panels and all auxiliary materials from a single-source Manufacturer or an accessory Manufacturer who is certified by the solid phenolic rain screen panel Manufacturer.
 - 1. Panels shall be manufactured in accordance with ISO9001, ISO14001 and EN 16001
- D. Pre-Installation Conference: Conduct pre-installation conference at Project site prior to commencing construction of mock-up specified herein to verify Project requirements.
 - 1. Review solid phenolic rain screen panel installation requirements including substrate surface preparation, environmental limitations, typical details, Manufacturer's recommended installation procedures, coordination with adjacent trades, testing and inspection procedures, protection and repair procedures.
 - 2. Ensure all sub-trades interfacing with or affected by the construction of the solid phenolic rain screen panel system are present, including Architect, General Contractor, solid

phenolic rain screen panel Manufacturer, and window contractor and any other installer whose work interfaces with or affects the solid phenolic rain screen wall panels.

1.07 PROJECT CONDITIONS, STORAGE, AND HANDLING

- A. Environmental Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of solid phenolic rain screen wall panels to be performed according to Manufacturer's written installation instructions and warranty requirements.
- B. Field Measurements: Verify actual panel measurements/openings by field measurement before fabrication to accommodate site tolerances and changes in construction.
- C. Deliver solid phenolic panel materials, aluminum support structure, and other manufactured accessory materials in Manufacturer's original, unopened, and undamaged containers with identification labels intact and visible. Package solid phenolic rain screen panels for protection during transportation and handling. Comply with Manufacturer's and Distributor's written delivery and handling guidelines.
- D. Store solid phenolic rain screen panels horizontally, covered with suitable weather tight and ventilated covering to prevent exposure to UV light and to ensure dryness with positive slope for drainage. Do not store panels in contact with ground or with materials that might cause staining, damage, scratching, or other surface damage.
- E. Phenolic panel installer shall notify the General Contractor immediately upon discovery of any issues with the substrate prior to continuation of panel system installation.
- F. Remove damage and waste panel material from site and legally dispose of according to authorities having jurisdiction.

1.08 WARRANTY

- A. Submit Manufacturer's standard 10 year warranty covering defects in material.

PART 2 - PRODUCTS

2.01 SOLID PHENOLIC EXTERIOR RAINSCREEN WALL PANELS

- A. General: Subject to compliance requirements, provide solid phenolic rain screen wall panels for exterior façade and interior wall applications:
 - 1. Basis of Design: Trespa Meteon
 - 2. Alternate Products:
 - a. FunderMax Exterior F Quality
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Product Description:
 - 1. Rain screen Material: Solid phenolic resin, fire-retardant exterior grade rainscreen panel with double hardened thermally cured NT surface finish
 - 2. Rain screen Panel Finish: finish as selected by Architect from Manufacturer's standard color range.
 - 3. Color A:
 - 4. Color B:
 - 5. Color C:
 - 6. Panel Finish Color shall be on both sides of panel.
 - 7. Rain screen Panel Core: Standard brown core.
 - 8. Rain screen Panel Thickness: 12mm.
 - 9. Rainscreen Panel Standard Sizes: As indicated on drawings.

10. Substructure: Exposed Fastener Type extruded aluminum profiles, clips, closures, and tees and indicated on the project drawings.

C. Physical Properties:

1. Smoke Development Index: Less than 40 per ASTM E-84.
2. Flame Spread Index: Less than 10 per ASTM E-84.
3. Panels shall have UV and weather resistance performance with a grey scale rating minimum of 4-5 per ISO 4892-2, 4892-3.
4. Panels shall be impact resistant per EN-ISO 178
5. Panels shall be scratch resistant per EN-438-6
6. Panels shall have a Hail Impact Resistance (HIR) rating of 5 (no damage)
7. Panels shall be ICC AC92 compliant and have ICC Evaluation Services Report.

2.02 AUXILIARY MATERIALS

- A. Aluminum Support Structure: Extruded, finished, and color-matched for the type of use indicated on project Drawings.
- B. Attachment Accessories: Of type, size, corrosion-resistance, holding-power and color-matched as required to suit attachment to aluminum support structure.

2.03 FABRICATION

- A. General: Fabricate solid phenolic rain screen wall panels and accessory materials in accordance with Manufacturer's written instructions and approved submittals, and at a fabrication facility trained and approved by Manufacturer. Comply with indicated profiles and within dimensional and structural requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances of structural substrate, aluminum support structure, solid phenolic rain screen panel, and other conditions affecting performance.
 1. Verify that substrate conditions are acceptable for product installation and within acceptable tolerances in accordance with Manufacturer's written instructions.
 2. Examine rough-in installation for components and systems adjacent to and penetrating into solid phenolic rain screen panels to verify actual locations of penetrations relative to joint locations of panels prior to panel installation.
 3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Aluminum Support Structure: Install clips, L-shapes, J-shapes, Z-shapes, hat channels, fillers, and other components in accordance with approved Shop Drawings and Manufacturer's recommended installation instructions.
- B. Install aluminum support structure framing level and plumb and within tolerances of the completed system as approved and recommended by Manufacturer and in accordance with approved Shop Drawings.

3.03 SOLID PHENOLIC RAINSCREEN PANEL INSTALLATION

- A. Install solid phenolic rain screen panels plumb and level and accurately spaced per Manufacturer's written installation instructions and in accordance with approved Shop Drawings.

- B. Fasten solid phenolic rain screen wall panels to aluminum support structure with fasteners approved for use with adjoining construction and in accordance with approved Shop Drawings for color matching and to confirm compliance with wind load and engineering design requirements.
- C. Accessory Rain screen System Materials: Install corner profiles, gaskets, trim, and joint closure strips as required with fasteners and adhesive appropriate for use with adjoining construction as indicated on drawings and as recommended by Manufacturer.
- D. Erection Tolerances: Install aluminum support structure within the required installation tolerances as recommended by Manufacturer and in accordance with approved Shop Drawings.
- E. Do not apply sealant to solid phenolic rain screen panel joinery unless otherwise indicated on Drawings or in accordance with Manufacturer's recommended installation instructions.

3.04 CLEANING

- A. Upon completion of solid phenolic rain screen wall panel installation clean finished surfaces as recommended by panel Manufacturer prior to Owners' acceptance.
- B. Legally dispose of all surplus materials off site.

END OF SECTION

SECTION 07 5300
ELASTOMERIC MEMBRANE ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Elastomeric roofing membrane, mechanically fastened conventional and adhered conventional application.
- B. Insulation, flat and tapered.
- C. Deck sheathing and cover board.
- D. Flashings.
- E. Roofing cant strips, stack boots, roofing expansion joints, and walkway pads.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood nailers and curbs.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Counterflashings, reglets.
- C. Section 07 7100 - Roof Specialties: Prefabricated roofing expansion joint flashing.
- D. Section 07 7200 - Roof Accessories: Roof-mounted units; prefabricated curbs.
- E. Section 22 1006 - Plumbing Piping Specialties: Roof drains.

1.03 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2017a.
- B. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2013.
- C. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.
- D. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2015.
- E. FM DS 1-28 - Wind Design; 2016.
- F. NRCA (WM) - The NRCA Waterproofing Manual; 2005.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers; review preparation and installation procedures and coordination and scheduling necessary for related work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating membrane materials, flashing materials, insulation, surfacing, and fasteners.
- C. Shop Drawings: Indicate joint or termination detail conditions, conditions of interface with other materials, and setting plan for tapered insulation.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate membrane seaming precautions and perimeter conditions requiring special attention.

- F. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during application, and supplementary instructions given.
- G. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience, and approved by manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in manufacturer's original containers, dry, undamaged, with seals and labels intact.
- B. Store products in weather protected environment, clear of ground and moisture.
- C. Protect foam insulation from direct exposure to sunlight.

1.08 FIELD CONDITIONS

- A. Do not apply roofing membrane during unsuitable weather.
- B. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed the same day.

1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a two year period after Date of Substantial Completion.
- C. Provide Manufacturer's 30 Year Warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. EPDM Membrane Materials:
 - 1. Carlisle Roofing Systems, Inc; Sure-Seal EPDM: www.carlisle-syntec.com/#sle.
 - 2. Firestone Building Products, LLC; _____: www.firestonebpco.com.
 - 3. Johns Manville; JM EPDM: www.jm.com/#sle.
 - 4. Versico, a division of Carlisle Construction Materials Inc; VersiGard EPDM: www.versico.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Insulation:
 - 1. Dow Chemical Company; _____: www.dow.com.
 - 2. GAF: www.gaf.com/#sle.
 - 3. Versico, a division of Carlisle Construction Materials Inc; SecurShield Insulation: www.versico.com/#sle.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ROOFING

- A. Elastomeric Membrane Roofing: One ply membrane, fully adhered, over insulation.
- B. Acceptable Insulation Types - Constant Thickness Application: Any of the types specified.
 - 1. Minimum 2 layers of polyisocyanurate board.

- C. Acceptable Insulation Types - Tapered Application: Any of the types specified.
 - 1. Tapered polyisocyanurate board.

2.03 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

- A. Membrane: Ethylene-propylene-diene-terpolymer (EPDM); non-reinforced; complying with minimum properties of ASTM D4637/D4637M.
 - 1. Thickness: 0.090 inch (90 mil).
 - 2. Color: Black.
- B. Seaming Materials: As recommended by membrane manufacturer.
- C. Membrane Fasteners: As recommended by and approved by membrane manufacturer.
- D. Flexible Flashing Material: Same material as membrane; conforming to the following:

2.04 DECK SHEATHING AND COVER BOARDS

- A. Deck Sheathing: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 5/8 inch thick.
 - 1. Manufacturers:
 - a. DenDeck by Georgia-Pacific.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cover Board: Glass mat faced gypsum panels, ASTM C1177/C1177M, fire resistant type, 5/8 inch thick.
 - 1. Manufacturers:
 - a. DensDeck Prime by Georgia-Pacific.

2.05 INSULATION

- A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
 - 1. Classifications:
 - a. Type II:
 - 1) Class 1 - Faced with glass fiber reinforced cellulosic felt facers on both major surfaces of core foam.
 - 2) Compressive Strength: Classes 1-2-3, Grade 1 - 16 psi (110 kPa), minimum.
 - 3) Thermal Resistance, R-value: At 1-1/2 inch thick (UNO); Class 1, Grades 1-2-3 - 8.4 (1.48) at 75 degrees F.
 - 2. Board Size: 48 by 96 inch.
 - 3. Board Thickness: Minimum 1.5 inch.
 - 4. Tapered Board: Slope as indicated; minimum thickness 1/2 inch; fabricate of fewest layers possible.
 - 5. Board Edges: Square.
 - 6. Manufacturers:
 - a. Dow Chemical Company: www.dow.com.
 - b. GAF; EnergyGuard Polyiso Insulation: www.gaf.com/#sle.
 - c. Versico, a division of Carlisle Construction Materials Inc; SecurShield Insulation: www.versico.com/#sle.

2.06 ACCESSORIES

- A. Prefabricated Roofing Expansion Joint Flashing: As specified in Section 07 7100.
- B. Insulation Joint Tape: Glass fiber reinforced type as recommended by insulation manufacturer, compatible with roofing materials; 6 inches wide; self adhering.

- C. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.
- D. Membrane Adhesive: As recommended by membrane manufacturer.
- E. Surface Conditioner for Adhesives: Compatible with membrane and adhesives.
- F. Thinners and Cleaners: As recommended by adhesive manufacturer, compatible with membrane.
- G. Insulation Adhesive: As recommended by insulation manufacturer.
- H. Walkway Pads: Suitable for maintenance traffic, contrasting color or otherwise visually distinctive from roof membrane.
 - 1. Composition: Asphaltic with mineral granule surface.
 - 2. Surface Color: White or yellow.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Verify deck is supported and secure.
- C. Verify deck is clean and smooth, flat, free of depressions, waves, or projections, properly sloped and suitable for installation of roof system.
- D. Verify deck surfaces are dry and free of snow or ice.
- E. Verify that roof openings, curbs, and penetrations through roof are solidly set, and cant strips are in place.

3.02 INSULATION - UNDER MEMBRANE

- A. Attachment of Insulation:
 - 1. Mechanically fasten first layer of insulation to deck in accordance with roofing manufacturer's instructions and Factory Mutual requirements.
 - 2. Embed second layer of insulation into full bed of adhesive in accordance with roofing and insulation manufacturers' instructions.
- B. Lay subsequent layers of insulation with joints staggered minimum 6 inch from joints of preceding layer.
- C. Place tapered insulation to the required slope pattern in accordance with manufacturer's instructions.
- D. Lay boards with edges in moderate contact without forcing. Cut insulation to fit neatly to perimeter blocking and around penetrations through roof.
- E. Tape joints of insulation in accordance with roofing and insulation manufacturers' instructions.
- F. At roof drains, use factory-tapered boards to slope down to roof drains over a distance of 18 inches.
- G. Do not apply more insulation than can be covered with membrane in same day.

3.03 MEMBRANE APPLICATION

- A. Apply elastomeric membrane roofing system in accordance with manufacturer's recommendations and NRCA (WM) applicable requirements.
- B. Roll out membrane, free from wrinkles or tears. Place sheet into place without stretching.
- C. Shingle joints on sloped substrate in direction of drainage.

- D. Fully Adhered Application: Apply adhesive to substrate as required by manufacturer. Fully embed membrane in adhesive except in areas directly over or within 3 inches of expansion joints. Fully adhere one roll before proceeding to adjacent rolls.
- E. Overlap edges and ends and seal seams by contact adhesive, minimum 3 inches. Seal permanently waterproof. Apply uniform bead of sealant to joint edge.
- F. At intersections with vertical surfaces:
 - 1. Extend membrane over cant strips and up a minimum of 4 inches onto vertical surfaces.
 - 2. Fully adhere flexible flashing over membrane and up to nailing strips.
- G. At gravel stops, extend membrane under gravel stop and to the outside face of the wall.
- H. Around roof penetrations, seal flanges and flashings with flexible flashing.
- I. Install roofing expansion joints where indicated. Make joints watertight.
 - 1. Install prefabricated joint components in accordance with manufacturer's instructions.
- J. Coordinate installation of roof drains and sumps and related flashings.

3.04 PROTECTION

- A. Protect installed roofing and flashings from construction operations.
- B. Where traffic must continue over finished roof membrane, protect surfaces using durable materials.

END OF SECTION

SECTION 07 7100
ROOF SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured roof specialties, including copings and fascias.
- B. Roof expansion joint covers.

1.02 RELATED REQUIREMENTS

- A. Section 07 7200 - Roof Accessories: Manufactured curbs, roof hatches, and snow guards.

1.03 REFERENCE STANDARDS

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2017a.
- B. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2017.
- C. NRCA (RM) - The NRCA Roofing Manual; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.
- C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
- D. Samples: Submit two 6 inch by 6 inch color samples of the manufacturer's standard color selection.
- E. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Roof Edge Flashings and Copings:
 - 1. Metal-Era Inc; Perma-Tite: www.metalera.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Control and Expansion Joint Covers:
 - 1. Metal-Era Inc; Perma-Tite: www.metalera.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.
- C. Pipe and Penetration Flashings:

2.02 COMPONENTS

- A. Roof Edge Flashings: Factory fabricated to sizes required; mitered, welded corners; concealed fasteners.
 - 1. Configuration: Fascia, cant, and edge securement for roof membrane.
 - 2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.

3. Material: Formed aluminum sheet, 0.063 inch thick, minimum.
 4. Finish: 70 percent polyvinylidene fluoride.
 5. Color: To be selected by Architect from manufacturer's standard range.
- B. Copings: Factory fabricated to sizes required; mitered, welded corners; concealed fasteners.
1. Configuration: Concealed continuous hold down cleat at both legs; internal splice piece at joints of same material, thickness and finish as cap; concealed stainless steel fasteners.
 2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test method RE-3 to positive and negative design wind pressure as defined by applicable local building code.
 3. Material: Formed aluminum sheet, 0.063 inch thick, minimum.
 4. Finish: 70 percent polyvinylidene fluoride.
 5. Color: To be selected by Architect from manufacturer's standard range.
- C. Control and Expansion Joint Covers: Composite construction of 6" inch wide flexible EPDM flashing of white color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 1 inch. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

2.03 FINISHES

- A. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system; color as indicated.

2.04 ACCESSORIES

- A. Sealant for Joints in Linear Components: As recommended by component manufacturer.
- B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.

3.02 INSTALLATION

- A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Seal joints within components when required by component manufacturer.
- C. Coordinate installation of components of this section with installation of roofing membrane and base flashings.

END OF SECTION

SECTION 07 7200
ROOF ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Curbs.
- B. Equipment rails.

1.02 RELATED REQUIREMENTS

- A. Section 07 5300 - Elastomeric Membrane Roofing

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used.
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit detailed layout developed for this project and provide dimensioned location and number for each type of roof accessory.
- D. Warranty Documentation:
 - 1. Submit manufacturer warranty.
 - 2. Ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products under cover and elevated above grade.

1.05 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 ROOF CURBS

- A. Roof Curbs Mounting Assemblies: Factory fabricated hollow sheet metal construction, internally reinforced, and capable of supporting superimposed live and dead loads and designated equipment load with fully mitered and sealed corner joints welded or mechanically fastened, and integral counterflashing with top and edges formed to shed water.
 - 1. Roof Curb Mounting Substrate: Curb substrate consists of corrugated metal roof deck with insulation.
 - 2. Sheet Metal Material:
 - a. Aluminum: 0.080 inch minimum thickness, with 3003 alloy, and H14 temper.
 - 3. Roofing Cants: Provide integral sheet metal roofing cants dimensioned to begin slope at top of roofing system at 1:1 slope; minimum cant height 4 inches.
 - 4. Provide for layouts and configurations as indicated on drawings.
- B. Curbs at Roof Openings: Provide curb at sides of roof opening, with top of curb horizontal and level for equipment mounting.

1. Provide wood nailer along top of curb.
 2. Insulate inside curbs with 1-1/2 inch thick fiberglass insulation.
 3. Height Above Finished Roof Surface: 8 inches, minimum.
- C. Equipment Rail Curbs: Straight curbs on each side of equipment, with top of curbs horizontal and level with each other for equipment mounting.
1. Provide wood nailer along top of rails.
 2. Provide DryCap Sleeper Cap by Roof Screen Manufacturing: www.roofscreen.com
 3. Height Above Finished Roof Surface: 8 inches, minimum.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using methods recommended by manufacturer for achieving acceptable results for applicable substrate under project conditions.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions, in manner that maintains roofing system weather-tight integrity.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 07 9200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 - Door Hardware: Setting exterior door thresholds in sealant.
- B. Section 09 2116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.03 REFERENCE STANDARDS

- A. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants; 2015.
- B. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.
- D. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems; 2000 (Reapproved 2011).
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2008 (Reapproved 2012).
- G. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- H. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- D. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.
- E. Sustainable Design Documentation: For sealants and primers, submit VOC content and emissions documentation as specified in Section 01 6116.
- F. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.
- D. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
 - 1. Adhesion Testing: In accordance with ASTM C794.
 - 2. Compatibility Testing: In accordance with ASTM C1087.
 - 3. Allow sufficient time for testing to avoid delaying the work.
 - 4. Deliver to manufacturer sufficient samples for testing.
 - 5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.
 - 6. Testing is not required if sealant manufacturer provides data showing previous testing, not older than 24 months, that shows satisfactory adhesion, lack of staining, and compatibility.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on the drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Wall expansion and control joints.
 - b. Joints between different exposed materials.
 - c. Other joints indicated on drawings.
 - 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between dissimilar exposed materials, unless otherwise indicated.
 - c. Other joints indicated on drawings.
 - 3. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
- B. Exterior Joints: Use nonsag non-staining silicone sealant, Type 1, unless otherwise indicated.
 - 1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing; Type 1C.
- C. Interior Joints: Use nonsag Acrylic emulsion latex sealant, Type 2, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant; Type 2.

2. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; ; Type 6.
3. In Sound-Rated Assemblies: Acrylic emulsion latex sealant; Type 5.
4. Narrow Control Joints in Interior Concrete Slabs: Self-leveling polyurea sealant; Type 7.

D. Definitions:

1. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.
2. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".

2.02 JOINT SEALANTS - GENERAL

- A. Sealants and Primers: Provide products with levels of volatile organic compound (VOC) content as indicated in Section 01 6116.
- B. Sealant Types Summary:
 1. Type 1: Non-Staining Silicone.
 2. Type 2: Acrylic Emulsion Latex
 3. Type 3: Non-Curing Butyl Sealant
 4. Type 4: Semi-Rigid Self-Leveling Polyurea Joint Filler
 5. Type 5: Acrylic Emulsion Latex
 6. Type 6: Mildew-Resistant Silicone Sealant

2.03 NONSAG JOINT SEALANTS

- A. Type 1 - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 1. Movement Capability: $\pm 50\%$, minimum.
 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 4. Color: To be selected by Architect from manufacturer's full range.
 5. Cure Type: Single-component, neutral moisture curing.
 6. Manufacturers:
 - a. Dow Corning Corporation; 795 Silicone Building Sealant: www.dowcorning.com/construction/#sle.
 - b. Pecora Corporation; 890FTS Field Tintable Ultra Low Modulus Architectural Silicone Sealant - Class 100: www.pecora.com.
 - c. Pecora Corporation; 890FTS-TXTR Field Tintable Textured Ultra Low Modulus Architectural Silicone Sealant - Class 50: www.pecora.com.
 - d. Momentive Performance Materials, Inc (formerly GE Silicones); SilPruf NB SCS9000: www.siliconeforbuilding.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- B. Type 6 - Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 1. Color: White or Clear.
 2. Manufacturers:
 - a. Pecora Corporation; ____: www.pecora.com.
 - b. Sika Corporation; Sikasil GP: www.usa-sika.com/#sle.

- c. Substitutions: See Section 01 6000 - Product Requirements.
- C. Type 2 - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
 - 1. Color: Standard colors matching finished surfaces, Type OP (opaque).
 - 2. Grade: ASTM C834; Grade - Minus 18 Degrees C.
 - 3. Manufacturers:
 - a. Hilti, Inc; CP 506 Smoke and Acoustical Sealant: www.us.hilti.com/#sle.
 - b. Pecora Corporation; ____: www.pecora.com.
 - c. Sherwin-Williams Company; White Lightning 3006 Siliconized Acrylic Latex Caulk: www.sherwin-williams.com/#sle.
 - d. Tremco Global Sealants; Tremfles 834 Siliconized Acrylic Latex Selant: www.tremcosealants.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- D. Type 5 - Acoustical Sealant; Acrylic Emulsion Latex: Water-based; ASTM C 834, Type OP, Grade NF single component, paintable.
 - 1. Composition: Acrylic latex emulsion sealant.
 - 2. Products:
 - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant: www.pecora.com.
 - b. Hilti, Inc.; CP 506 Smoke and Acoustical Sealant: www.us.hilti.com.
 - c. USG Company; Sheetrock Brand Acoustical Sealant; www.usg.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- E. Type 3 - Non-Curing Butyl Sealant: Solvent-based; ASTM C919; single component, nonsag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.
 - 1. Manufacturers:
 - a. Pecora Corporation; BA-98: www.pecora.com.

2.04 SELF-LEVELING SEALANTS

- A. Type 4 - Semi-Rigid Self-Leveling Polyurea Joint Filler: Two-component, 100 percent solids; Intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
 - 1. Hardness: 75, Shore A, minimum, when tested in accordance with ASTM D2240 after 7 days.
 - 2. Color: To be selected by Architect from manufacturer's standard colors.
 - 3. Joint Width, Minimum: 1/8 inch.
 - 4. Joint Width, Maximum: 3/4 inch.
 - 5. Joint Depth: Provide product suitable for joints from 1/8 inch to 1-1/2 inches in depth excluding space for backer rod.
 - 6. Manufacturers:
 - a. Adhesives Technology Corporation; Crackbond JF-311: www.atcepoxy.com/#sle.
 - b. ARDEX Engineered Cements; ARDEX ArdiSeal: www.ardexamericas.com.
 - c. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.

- B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Acoustical sealant installation: See Section 09 2116.
- D. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
 - 1. Width/depth ratio of 2:1.
 - a. Minimum joint depth: 1/4 inch; Maximum joint depth: 1/2 inch, unless otherwise required by manufacturer.
 - 2. Neck dimension no greater than 1/3 of the joint width.
 - 3. Surface bond area on each side not less than 75 percent of joint width.
- E. Install backer rod using blunt or rounded tool to a uniform (+/- 1/8 inch) depth without puncturing the material.
- F. Install bond breaker backing tape where backer rod cannot be used.
- G. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- H. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- I. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- J. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 FIELD QUALITY CONTROL

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Destructive Adhesion Testing: If there are any failures in first 1000 linear feet, notify Architect immediately.
- C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.
- D. Repair destructive test location damage immediately after evaluation and recording of results.

END OF SECTION

SECTION 08 1114
PREFINISHED STEEL DOORS FRAMES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work under this section shall include the furnishing of all items shown on the drawings and as specified, including but not limited to, the following:
 - 1. Knocked down, site assembled prefinished steel door frames.

1.02 RELATED SECTIONS

- A. Section 01 60 00 - Product Requirements
- B. Section 08 14 16 - Flush Wood Doors
- C. Section 08 71 00 - Hardware
- D. Section 08 80 00 - Glazing

1.03 REFERENCES

- A. ASTM A653 - Standard for hot dipped galvanized steel material
- B. UBC 7-2-97, UBC 7-4-97 Positive Pressure Fire Test Certification.
- C. UL 10B Fire test of Door Assemblies and UL10C Standard for Positive Pressure Fire Tests of Door Assemblies
- D. NFPA 80 - Fire Doors and Windows (Latest Edition)
- E. NFPA-101 - Life Safety Codes (Latest Edition)
- F. ASTM D2197 - Standard Test Method for Adhesion of Organic Coatings by Scrape Adhesion.
- G. ASTM D2247 - Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
- H. ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- I. ASTM D3361 - Standard Practice for Unfiltered Open-Flame Carbon-Arc exposures of Paint and Related Coatings.
- J. ASTM B117 - Standard test for salt spray testing

1.04 SUBMITTALS

- A. Section 01 33 00: Submittal procedures.
- B. Product Data: Indicate frame material, gauge, configuration and finishes.
- C. Shop Drawings: Indicate frame elevations, details of frame anchorage, reinforcements required, rough opening requirements, location of hardware embosses, and finishes separately.
- D. Samples: Submit two 3 inch by 3 inch samples, illustrating each standard factory finished frame colors.
- E. Manufacturer's Installation Instructions: Provide installation instructions for all products under this section.
- F. Manufacturer's Certificate of Warranty: Provide manufacturer's standard warranty certificate stating material is warranted for a period of one year from date of building occupancy

1.05 QUALITY ASSURANCE

A. Quality Standards

1. 1. Material free from defects in material and according to project specifications for pre-engineered opening systems
2. 2. Proven durability of factory finishes allowing for bending and shaping of material after finish is applied

B. Installed Frame Assembly: Conform to NFPA 80

1. Use only installers familiar with installation of prefinished opening systems and applied casing frame installation

1.06 DELIVERY, STORAGE AND HANDLING

- A. Section 01 60 00: Transport, handle, store, and protect products in a dry area off the ground.
- B. Accept frames on site in manufacturer's box packaging with identification labels intact. Inspect for damage.
- C. Do not open individual boxes until installation is to begin.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Timely Industries, A Division of SDS Industries, Inc., 10241 Norris Avenue, Pacoima, CA, 91331-2292; Phone toll free: 800-247-6242; Fax: 818-492-3530. Web site: www.timelyframes.com <<http://www.timelyframes.com>>.
- B. Frames: Provide interior frames for project areas as shown on plans and door schedule.
- C. Substitutions: Refer to Section 01600

2.02 FRAMES

- A. Frame Material: Hot dipped galvanized steel, for interior frames in normal atmospheric exposures.
- B. Frame Throat Opening: As shown on plan details to suit finished wall thickness.
- C. Frames to have kerf formed into frame profile for installation of smoke gasket or weatherstrip material
- D. Frame Profile - Unequal Rabbet profile, standard with manufacturer
 1. 2. "CK" Series, 1.2 mm (18 gauge) thick, with kerf for door seal/gasket
- E. Casings
 1. Provide TA-8 steel casing.

2.03 FRAME REINFORCEMENT AND ACCESSORIES

- A. Provide reinforcements shipped loose to project site for hardware application
 1. TA-10 - Regular arm closers, casing mounted door guards and coordinators
 2. TA-12 - Parallel arm closers, Rim Exit device strikes, other stop mounted surface hardware
 3. TA-47 - For CK frame, Parallel arm closers, Rim Exit device strikes, other stop mounted surface hardware
 4. TA-25 - Double acting spring hinges, continuous hinges, other surface mounted hardware on door rabbet or cased opening frame
 5. Provide hinge reinforcement (TA-11) of 14 gauge steel pierced to create depth of thread for hinge screws equal to or exceeding 10 gauge steel.

6. Provide cut-outs and reinforcement for mortised hardware - see section 08 71 00
- B. Weatherstrip/Smoke Gasket: TA-46 (QDS500) 90 minute rated gasket for kerfed frames. Provide prefinished frames with factory installed TA-46. All pieces factory mitered to assure perfect corner alignment. Select color: Black
- C. Installation fasteners (Provided by others)
 1. Interior Frames: #6 Drywall type - length sufficient to penetrate studs or structure at least ½”.

2.04 FABRICATION

- A. Openings for single swing, pair, borrowed light and sidelight frames to be pre-cut, notched and fabricated at the manufacturer's facility. Provide kerf at stop for installation of smoke gasket.
- B. Provide hinge reinforcement (TA-11) of 14 gauge steel pierced to create depth of thread for hinge screws equal to or exceeding 7 gauge steel. Hinge plate to be mechanically attached to hinge emboss on frame
- C. Casing Clips: Fabricate frames with factory applied, heat treated clips to ensure no deflection in the clip upon application or removal of casing. Attachment clips may not be of same material as frame
- D. Provide notches, tabs and/or stops for positive alignment of frame parts at all corners
- E. Factory install TA-46 smoke gasket on all prefinished, CK series frames. Install with factory mitered corners to ensure adequate seal and pleasing appearance

2.05 FINISHING

- A. Frame Units: Prefinished with factory applied impact resistant, polyester baked enamel finish or optional electrostatic applied water based paint system
- B. Frames for high humidity areas to be electro galvanized. See 2.02.B for specific locations
- C. Casing Finishes
 1. Factory painted to match frame.
- D. Colors to be selected from:
 1. Standard Colors

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify acceptability of existing conditions before starting work.
- B. Verify that opening sizes and wall thicknesses are within specified tolerances. Verify that all finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

- A. Install frames in accordance with manufacturer's requirements.
- B. Anchor frames with screws located at every casing clip or every 11” as shown on manufacturer's instructions. Field verify quantity and location of fasteners prior to installing casing.
- C. Install prefinished frames near end of the project after wall painting and wall coverings.
- D. Install frames using qualified installers familiar with installation of prefinished drywall frames.

- E. Coordinate installation of frames with installation of hardware specified in Section 08 7100 and doors in Section 08 1416.
- F. Touch-up blemishes on finished frames with factory prepared touch up paint.

END OF SECTION

SECTION 08 1416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

1.02 RELATED REQUIREMENTS

- A. Section 08 1114 - Prefinished Steel Door Frames
- B. Section 08 7100 - Door Hardware.
- C. Section 08 8000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1; 2016, with Errata (2017).
- C. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Samples: Submit two samples of door veneer, 4 by 4 inch in size illustrating wood grain, stain color, and sheen.
- E. Manufacturer's Installation Instructions: Indicate special installation instructions.
- F. Specimen warranty.
- G. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging. Inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.
- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Eggers Industries; ____: www.eggersindustries.com.
 - 2. Graham Wood Doors; ____: www.grahamdoors.com.
 - 3. Marshfield DoorSystems, Inc; ____: www.marshfielddoors.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 DOORS AND PANELS

- A. Doors: Refer to drawings for locations and additional requirements.
 - 1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
 - 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Wood veneer facing with factory transparent finish to be selected for factory standard finishes.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: Red oak, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
 - 1. Vertical Edges: Same species as face veneer.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge for hardware reinforcement.
 - 2. Provide solid blocking for other throughbolted hardware.
- C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- F. Provide edge clearances in accordance with the quality standard specified.

2.06 FACTORY FINISHING - WOOD VENEER DOORS

- A. Finish work in accordance with WDMA I.S. 1A for grade specified and as follows:
 - 1. Transparent:

- a. System - TR-6, Catalyzed Polyurethane.
 - b. Stain: As selected by Architect.
 - c. Sheen: Satin.
- B. Factory finish doors in accordance with approved sample.
- C. Seal door top edge with color sealer to match door facing.

2.07 ACCESSORIES

- A. Prefinished Steel Door Frames: As specified in Section 08 11 14.
- B. Glazing: As specified in Section 08 8000.
- C. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.

3.03 TOLERANCES

- A. Conform to specified quality standard for fit and clearance tolerances.
- B. Conform to specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE

- A. See Drawings.

END OF SECTION

SECTION 08 7100
DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes furnishing and installation of door hardware for doors specified in "Hardware Sets" and required by actual conditions. Including screws, bolts, expansion shields, electrified door hardware, and other devices for proper application of hardware.
- B. Where items of hardware are not specified and are required for intended service, such omission, error or other discrepancy to be submitted to Architect fourteen calendar days prior to bid date for clarification by addendum.
- C. Products supplied but not installed under this Section:
 - 1. Hardware for aluminum doors will be furnished under this Section, but installed under Division 08 Openings
 - 2. Electrified hardware will be furnished under this Section, but installed by the security contractor.
- D. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- E. Related Divisions:
 - 1. Division 08 Openings

1.02 REFERENCES

- A. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI):
 - 1. ANSI/BHMA A156.1 Butts & Hinges (2006)
 - 2. ANSI/BHMA A156.3 Exit Devices (2014)
 - 3. ANSI/BHMA A156.4 Door Controls - Closers (2008)
 - 4. ANSI/BHMA A156.5 Cylinders and Input Devices for Locks (2014)
 - 5. ANSI/BHMA A156.6 Architectural Door Trim (2010)
 - 6. ANSI/BHMA A156.7 Template Hinge Dimensions (2009)
 - 7. ANSI/BHMA A156.8 Door Controls - Overhead Stops and Holders (2010)
 - 8. ANSI/BHMA A156.13 Mortise Locks & Latches (2005)
 - 9. ANSI/BHMA A156.15 Closer Holder Release Devices (2011)
 - 10. ANSI/BHMA A156.16 Auxiliary Hardware (2008)
 - 11. ANSI/BHMA A156.18 Materials & Finishes (2006)
 - 12. ANSI/BHMA A156.21 Thresholds (2009)
 - 13. ANSI/BHMA A156.22 Door Gasketing Systems (2012)
 - 14. ANSI/BHMA A156.26 Continuous Hinges (2006)
 - 15. ANSI/BHMA A156.28 Keying Systems (2007)
 - 16. ANSI/BHMA A156.29 Exit Locks and Alarms (2007)
 - 17. ANSI/BHMA A156.36 Auxiliary Locks (2010)
 - 18. ANSI/BHMA A156.115 Hardware Preparation in Steel Doors and Steel Frames (2014)
 - 19. ANSI/BHMA A156.115W Hardware Preparation in Wood Doors with Wood or Steel Frames (2006)
- B. International Code Council/American National Standards Institute (ICC/ANSI)/ADA:
 - 1. ICC/ANSI A117.1 Standards for Accessible and Usable Buildings and Facilities 2009
 - 2. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

- C. Underwriters Laboratories, Inc. (UL):
 - 1. UL 10C Positive Pressure Fire Test of Door Assemblies
 - 2. UL 1784 Air Leakage Test of Door Assemblies
 - 3. UL/ULC Listed
- D. Door and Hardware Institute (DHI):
 - 1. DHI Publication - Keying Systems and Nomenclature (1989)
 - 2. DHI Publication - Abbreviations and Symbols
 - 3. DHI Publication - Installation Guide for Doors and Hardware
 - 4. DHI Publication - Sequence and Format of Hardware Schedule (1996)
- E. National Fire Protection Agency (NFPA)
 - 1. NFPA 70 National Electrical Code 2014
 - 2. NFPA 80 Standard for Fire Doors and Other Opening Protective's 2013
 - 3. NFPA 101 Life Safety Code 2015
 - 4. NFPA 105 Standard for the Installation of Smoke Door Assemblies 2013
- F. Building Codes
 - 1. IBC International Building Code 2015
 - 2. Local Building Code

1.03 SUBMITTALS

- A. Submit in accordance with Conditions of the Contract and Division 1 Administrative Requirements.
- B. Shop Drawings:
 - 1. Organize hardware schedule organized in vertical format illustrated in DHI Publications Sequence and Formatting for the Hardware Schedule. Include abbreviations and symbols page according to DHI Publications Abbreviations and Symbols. Complete nomenclature of items required for each door opening as indicated.
 - 2. Coordinate final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of hardware.
 - 3. Architectural Hardware Consultant (AHC), as certified by DHI, who shall affix seal attesting to completeness and correctness, shall review hardware schedule prior to submittal.
- C. Submit manufacturer's catalog sheet on design, grade and function of items listed in hardware schedule. Identify specific hardware item per sheet, provide index, and cover sheet.
- D. Coordination: Distribute door hardware templates to related divisions within fourteen days of receiving approved door hardware submittals.
- E. Upon door hardware submittal approval, furnish for each electrified opening, three copies of point to point diagrams.
- F. Closeout Submittals: Submit to Owner in a three-ringed binder or CD if requested.
 - 1. Warranties.
 - 2. Maintenance and operating manual.
 - 3. Maintenance service agreement.
 - 4. Record documents.
 - 5. Copy of approved hardware schedule.
 - 6. Copy of approved keying schedule with bitting list.
 - 7. Door hardware supplier name, phone number and fax number.

1.04 QUALITY ASSURANCE

- A. Listed and Labeled electrified door hardware as defined in NFPA 70, Article 100, by a testing agency acceptable to authority having jurisdiction.
- B. Hardware supplier shall employ an Architectural Hardware Consultant (AHC) as certified by DHI and a member of the seal program who shall be available at reasonable times during course of work for Project hardware consultation.
 - 1. Electrified Door Hardware Supplier Qualifications: Experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Door hardware conforming to ICC/ANSI A117.1. : Handles, Pulls, Latches, Locks and operating devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
- D. Fire Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and or labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to UL 10C, unless otherwise indicated.
- E. Fire Door Inspection: Prior to receiving certificate of occupancy have fire rated doors inspected by an independent certified Fire and Egress Door Assembly Inspector (FDAI), as certified by Intertek (ITS), a written report shall be submitted to Owner and Contractor. Doors failing inspection shall be adjusted, replaced or modified to be within appropriate code requirements.
 - 1. Use for buildings under IBC 2009
- F. Smoke and Draft Control Door Assemblies: Where smoke and draft control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
- G. Door hardware certified to ANSI/BHMA standards as noted, participate and be listed in BHMA Certified Products Directory.
- H. Substitution request: Include the reason for requesting the substitution, clear catalog copy highlighting the proposed product and options, compliance statement, technical data, product warranty and lead time, to show how the proposed can meet or exceed established level of design function and quality. Approval of request is at the discretion of the owner, architect and their designated consultants.
- I. Pre-installation Meeting: Comply with requirements in Division 1 Section "Project Meetings."
 - 1. Convene meeting seven days before installation. Participants required to attend:
 - a. Contractor, installer, material supplier, manufacturer representatives, electrical contractor, security consultant and fire alarm consultant. Security/Fire by Advantech directly to S.D.
 - 2. Include in conference decisions regarding proper installation methods and procedures for receiving and handling hardware.
 - 3. Review sequence of operation for each type of electrified door hardware, inspect, and discuss electrical roughing-in and other preparatory work performed by other trades.
 - 4. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.

- J. Within fourteen days of receipt of approved door hardware submittals contact Owner with representative from hardware supplier to establish a keying conference. Verify keyway, visual key identification, number of master keys and keys per lock. Provide keying system per Owners instructions.
- K. Installer Qualifications: Specialized in performing installation of this Section and have five years minimum documented experience.
- L. Hardware listed in 3.07- Hardware Schedule is intended to establish type and grade.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Provide clean, dry and secure room for hardware delivered to Project but not yet installed.
- B. Furnish hardware with each unit marked and numbered in accordance with approved finish hardware schedule. Include door and item number for each type of hardware.
- C. Pack each item complete with necessary parts and fasteners in manufacturer's original packaging.
- D. Waste Management and Disposal: Separate waste materials for reuse or recycling in accordance with Division 1.

1.06 WARRANTY

- A. General Warranty: Owner may have under provisions of the Contract Documents and be an addition and run concurrently with other warranties made by Contractor under requirements of the Contract documents.
- B. Special Warranty: Warranties specified in this article shall not deprive Owner of other rights.
 - 1. Ten years for manual door closers.
 - 2. Five years for mortise, auxiliary and bored locks.
 - 3. Five years for exit devices.
 - 4. One year for electromechanical door hardware.
- C. Replace or repair defective products during warranty period in accordance with manufacturer's warranty at no cost to Owner. There is no warranty against defects due to improper installation, abuse and failure to exercise normal maintenance.
- D. Maintenance Tool and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware.

PART 2 - PRODUCTS

2.01 HINGES

- A. Standards: Products to be certified and listed by the following:
 - 1. Template Hinge Dimensions: ANSI/BHMA A156.7

2.02 CONTINUOUS HINGES

- A. Continuous hinges of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Products to be certified and listed by the following: Continuous Hinges: ANSI/BHMA A156.26 Grade 1
- C. Continuous Geared Hinges:
- D. Determine model number by door and frame application, door thickness, frequency of use, and fire rating requirements according to manufacturer's recommendations.

1. Length of hinge shall be 1" less door height unless otherwise stated in hardware sets.
- E. Material and Design:
- F. Base material: Anodized aluminum manufactured from 6063-T6 material, unexposed working metal surfaces shall be coated with TFE dry lubricant
- G. Bearings:
 1. Vertical loads shall be carried on Lubriloy RL bearings for non Fire Rated doors.
 2. Continuous hinges shall have a minimum spacing between bearings of 2-9/16". Typical door from 80" to 84" in height to have a minimum of 32 bearings.
 3. Options:
 - a. When full width of opening is required, use hinges that are designed to swing door completely from opening when door is opened to 95 degrees.
 - b. Fire rated hinges shall carry UL certification, up to and including 90-minute applications for wood doors and up to 3-hour applications for metal doors.
- H. Acceptable Manufacturers:
 1. Heavy Duty
 2. Hager Companies 780-224HD
 3. Bommer FM120HD
 4. Zero 914A

2.03 LOCKS AND LATCHES (GRADE 1 MORTISE)

- A. Locks and latches of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Products to be certified and listed by the following:
 1. ANSI/BHMA A156.13 Series 1000 Certified to Grade 1 for Operational and Security.
 2. UL/cUL Labeled and listed up to 3 hours for single doors up to 48" in width and up to 96" in height.
 3. UL10C/UBC 7-2 Positive Pressure Rated.
 4. ICC/ANSI A117.1.
- C. Lock and latch function numbers and descriptions of manufactures series as listed in hardware sets.
- D. Material and Design:
 1. Lock cases from fully wrapped, 12 gauge steel, Zinc dichromate for corrosion resistance.
 2. Non-handed, field reversible without opening lock case.
 3. Break away spindles to prevent unlocking during forced entry or vandalism.
 4. Levers, Zinc cast, Forged Brass or Stainless Steel and plated to match finish designation in hardware sets.
 5. Sectional Roses, solid Brass or Stainless Steel material and have a minimum diameter of 2-7/16".
 6. Escutcheons, of solid Brass or Stainless Steel material.
 7. Armor fronts, self-adjusting to accommodate a square edge door or a standard 1/8" beveled edge door.
- E. Latch and Strike:
 1. Stainless Steel latch bolt with minimum of 3/4" throw and deadlocking for keyed and exterior functions.
 2. Strike is to fit a standard ANSI A115 prep measuring 1-1/4" x 4-7/8" with proper lip length to protect surrounding trim.

3. Deadbolts to be 1-3/4" total length with a minimum of a 1" throw and 3/4" internal engagement when fully extended and made of Stainless Steel material.

- F. Acceptable Manufacturers:
1. Hager Companies: 3800 Series.
 2. Best: 45 series
 3. Sargent: 8200 Series

2.04 MORTISE DEADBOLTS

- A. Mortise deadbolts of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Manufacturer to be certified by the following:
- C. ANSI/BHMA A156.13 Series 2000 Grade 1 Operational and Security
1. UL/cUL listed for functions up to 3 hours for "A" label
 2. UL10C/UBC 7-2 Positive Pressure Rated
 3. ADA - Thumbturn
- D. Deadbolt function numbers and descriptions of manufactures series as listed in hardware sets.
- E. Material and Design:
1. Latch bolt projection 1"throw
 2. Case steel, zinc dichromate
 3. Armor front 5-9/16", case dimension 4-5/16" x 3-9/16" x 1"
- F. Acceptable Manufacturers:
1. Hager Companies: 3830 Series.
 2. Best
 3. Sargent: 4870 Series

2.05 CYLINDERS AND KEYING

- A. Cylinders of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Manufacturer shall meet the following:
1. Auxiliary Locks: ANSI/BHMA A156.5
 2. DHI Handbook "Keying systems and nomenclature" (1989)
- C. Cylinders:
1. Manufacturer's standard tumbler type.
 2. Furnish with cams/tailpieces as required for locking device that is being furnished for project.
- D. Keying:
1. Conduct a keying meeting the owner's representative, to establish their requirements.
 2. Copy of Owners approved keying schedule submitted to Owner and Architect with documentation of which keying conference was held and Owners sign-off.
 3. Provide a bitting list to Owner of combinations as established, and expand to twenty five percent for future use or as directed by Owner.
 4. Key into Owner's existing keying system.
 5. Keys to be shipped to Owner's representative, individually tag per keying conference.
 6. Provide visual key control identification on keys.
- E. Acceptable manufacturers:
1. Hager Companies

2. Schlage

2.06 CLOSERS (CAST IRON BODY GRADE 1)

- A. Closers of one manufacturer as listed for continuity of design and consideration of warranty. Unless otherwise indicated on hardware schedule, comply with manufacturer's recommendation for size of closer, depending on width of door, frequency of use, atmospheric pressure, ADAAG requirements, and fire rating.
- B. Standards: Manufacturer to be certified and or listed by the following:
 - 1. BHMA Certified ANSI A156.4 Grade 1
 - 2. ADA Compliant ANSI A117.1
 - 3. UL/cUL Listed up to 3 hours.
 - 4. UL10C Positive Pressure Rated
 - 5. UL10B Neutral Pressure Rated
- C. Material and Design:
 - 1. Provide cast iron non-handed bodies with full plastic covers.
 - 2. Closers shall have separate staked adjustable valve screws for latch speed, sweep speed, and backcheck.
 - 3. Provide Tri-Pack arms and brackets for regular arm, top jamb, and parallel arm mounting.
 - 4. One-piece seamless steel spring tube sealed in hydraulic fluid.
 - 5. Double heat-treated steel tempered springs.
 - 6. Precision-machined heat-treated steel piston.
 - 7. Triple heat-treated steel spindle.
 - 8. Full rack and pinion operation.
- D. Mounting:
 - 1. Out swing doors use surface parallel arm mount closers except where noted on hardware schedule.
 - 2. In swing doors use surface regular arm mount closers except where noted on hardware schedule.
 - 3. Provide brackets and shoe supports for aluminum doors and frames to mount fifth screw.
 - 4. Furnish drop plates where top rail conditions on door do not allow for mounting of closer and where backside of closer is exposed through glass.
- E. Size closers in compliance with requirements for accessibility (ADDAG). Comply with following maximum opening force requirements.
 - 1. Interior hinged openings: 5.0 lbs.
 - 2. Fire rated and exterior openings use minimum opening force allowable by authority having jurisdiction.
- F. Fasteners: Provide self-reaming and self-tapping wood and machine screws and sex nuts and bolts for each closer.
- G. Acceptable manufacturers:
 - 1. Hager Companies: 5100 Series
 - 2. LCN: 4040 Series
 - 3. Sargent: 281 Series

2.07 SENTRONIC CLOSERS

- A. Sentronic closers of one manufacturer as listed for continuity of design and consideration of warranty. Unless otherwise indicated on hardware schedule, comply with manufacturer's

recommendation for size of closer, depending on width of door, frequency of use, atmospheric pressure, ADAAG requirements, and fire rating.

- B. Standards: Manufacturer to be certified and or listed by the following:
 - 1. BHMA Certified ANSI A156.15 Grade 1
 - 2. ADA Compliant ANSI A117.1
 - 3. UL/cUL Listed up to 3 hours.
- C. Material and Design:
 - 1. Provide cast iron non-handed bodies with full plastic covers.
 - 2. Closers separate staked adjustable valve screws for latch speed, sweep speed, and backcheck.
 - 3. 24V or 120V
 - 4. Adjustable hold-open force
 - 5. Momentary on/off switch board assembly for testing door release
 - 6. Concealed or surface wiring
 - 7. Interfaces with alarm systems
- D. Mounting:
 - 1. Mounts either (stop face) push or (hinge) pull side
 - 2. Single point hold open
- E. Size closers in compliance with requirements for accessibility (ADDAG). Comply with following maximum opening force requirements.
 - 1. Interior hinged openings: 5.0 lbs.
 - 2. Fire rated and exterior openings shall have minimum opening force allowable by authority having jurisdiction.
- F. Fasteners: Provide self-reaming and self-tapping wood and machine screws and sex nuts and bolts for each closer.
- G. Acceptable manufacturer:
 - 1. LCN 4040SE

2.08 PROTECTIVE TRIM

- A. Protective trim of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Size of protection plate: Single doors, size two inches less door width (LDW) on push side of door, and one inch less on pull side of door. For pairs of doors, size one inch less door width (LDW) on push side of door, and ½ inch on pull side of door.
 - 1. Kickplates 10" high or sized to door bottom rail height

2.09 STANDARDS: MANUFACTURER SHALL MEET REQUIREMENTS FOR:

- A. Architectural Door Trim: ANSI/BHMA A156.6
- B. UL
- C. Material and Design:
 - 1. 0.050" gage stainless steel
 - 2. Corners square, polishing lines or dominant direction of surface pattern shall run across door width of plate.
 - 3. Bevel top, bottom and sides uniformly leaving no sharp edges.

- ## 2.10 STOPS AND HOLDERS

- ## 2.11 DOOR GASKETING AND WEATHERSTRIP

- 08 7100 - 9

3. Door bottoms: Apply to bottom of door, forming seal with threshold or floor when door is in closed position.
4. Sound Gasketing: Cutting or notching for stop mounted hardware not permitted.
5. Drip Guard: Apply to exterior face of frame header. Lip length to extend 4" beyond width of door.

2.12 STANDARDS: MANUFACTURER SHALL MEET REQUIREMENTS FOR:

- A. Door Gasketing and Edge Seal Systems: ANSI/BHMA A156.22
- B. BHMA certified for door sweeps, automatic door bottoms, and adhesive applied gasketing. (721)
- C. Smoke-Labeled Gasketing: Comply with NFPA 105 listed, labeled, and acceptable to authorities having jurisdiction, for smoke control indicated.
- D. Provide smoke labeled gasketing on 20 minute rated doors and on smoke rated doors.
- E. Fire-Rated Gasketing: Comply with NFPA 80 listed, labeled, and acceptable to Authorities Having Jurisdiction, for fire ratings indicated.
- F. Refer to Section 08 1416 Wood Doors for Category A or Category B. Comply with UBC 7-2 and UL10C positive pressure where frame applied intumescent seals are required. Provide Hager # 720 for single and 720 x 724 for a pair of doors.
- G. Acceptable Manufacturers:
 1. Meeting Stile Weatherstrip:
 - a. Hager Companies: 772SW 756SV
 - b. K.N. Crowder:
 - c. Reese:
 2. Door Bottom Sweeps:
 - a. Hager Companies: 751SW
 - b. K.N. Crowder:
 - c. Reese:

2.13 FINISHES

- A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if within range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved Samples.
- B. Comply with base material and finish requirements indicated by ANSI/BHMA A156.18 designations in hardware schedule.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install hardware per manufacturer's instructions and in compliance with:

1. NFPA 80.
 2. NFPA 105.
 3. ICC/ANSI A117.1.
 4. ANSI/BHMA A156.115 Hardware Preparation in Steel Doors and Steel Frames
 5. ANSI/BHMA A156.115W Hardware Preparation in Wood Doors with Wood or Steel Frames
 6. DHI Publication - Installation Guide for Doors and Hardware
 7. UL10C/UBC7-2
 8. Local building code.
 9. Approved shop drawings.
 10. Approved finish hardware schedule.
- B. Do not install surface mounted items until finishes have been completed on substrates involved. Set unit level, plumb and true to line location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

3.03 FIELD QUALITY CONTROL

- A. Material supplier to schedule final walk through to inspect hardware installation ten business days before final acceptance of Owner. Material supplier shall provide a written report detailing discrepancies of each opening to General Contractor within seven calendar days of walk through.

3.04 ADJUSTMENT, CLEANING AND DEMONSTRATING

- A. Adjustment: Adjust and check each opening to ensure proper operation of each item of finish hardware. Replace items that cannot be adjusted to operate freely and smoothly or as intended for application at no cost to Owner.
- B. Cleaning: Clean adjacent surfaces soiled by hardware installation. Clean finished hardware per manufacturer's instructions after final adjustments has been made. Replace items that cannot be cleaned to manufacturer's level of finish quality at no cost to Owner.
- C. Demonstration: Conduct a training class for building maintenance personnel demonstrating the adjustment, operation of mechanical and electrical hardware. Special tools for finished hardware to be turned over and explained usage at this meeting.

3.05 PROTECTION

- A. Leave manufacturer's protective film intact and provide proper protection for all other finish hardware items that do not have protective material from the manufacture until Owner accepts Project as complete.

3.06 HARDWARE SCHEDULE

Hardware Set 1

Door # CM200, M201, M203, M203, M205, M206, M207, M207A, M209, M210

Each opening to receive:

Type	Description	Finish	
1 ea.	Continuous Hinge	780-224 HD Clear	HAG
1 ea	Intruder Classroom	3857 x ARC(less cylinder)US26D	HAG
1 ea	Mortise Cylinder	Match Existing System US26D	-
1 ea	O.H. Stop	7017 CON US26D	HAG
1 ea	Kick Plate	190S 10" x 2" LDW US32D	HAG

1 ea Mop Plate 190S 4" x 1" LDW US32D HAG
Gasket by frame manufacturer for kerf'ed frame.

END OF SECTION

SECTION 08 8000
GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass.
- B. Decorative plastic glazing film.
- C. Glazing compounds and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 08 1416 - Flush Wood Doors: Glazed lites in doors.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
- B. ASTM C1036 - Standard Specification for Flat Glass; 2016.
- C. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2012.
- D. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass; 2014.
- E. GANA (GM) - GANA Glazing Manual; 2008.
- F. GANA (SM) - GANA Sealant Manual; 2008.
- G. GANA (LGRM) - Laminated Glazing Reference Manual; 2009.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Samples:
 - 1. Glass Units: Submit two samples 12 by 12 inch in size.
 - 2. Decorative Plastic Film: Submit two samples 6 by 6 inch in size.
- D. Certificates: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Certificate: Certify that safety glass meets or exceeds specified requirements.

1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual and GANA Sealant Manual for glazing installation methods.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 50 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

- B. Sealed Insulating Glass Units: Provide a five (5) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.
- C. Laminated Glass: Provide a five (5) year warranty to include coverage for delamination, including replacement of failed units.

PART 2 PRODUCTS

2.01 GLAZING UNITS

- A. Type S-1 - Single Vision Glazing:
 - 1. Application: All interior glazing unless otherwise indicated.
 - 2. Type: Laminated Safety glass.
 - 3. Tint: Clear.
 - 4. Thickness: 1/4 inch.
- B. Type S-2 - Single Vision Glazing:
 - 1. Application: As showing on drawings.
 - 2. Type: Laminated Safety glass.
 - 3. Tint: Clear with obscure lamenate coating.
 - 4. Thickness: 1/4".

2.02 GLASS MATERIALS

- A. Float Glass Manufacturers:
 - 1. AGC Flat Glass North America, Inc: www.na.agc-flatglass.com.
 - 2. Guardian Industries Corp: www.sunguardglass.com.
 - 3. Pilkington North America Inc: www.pilkington.com/na.
 - 4. PPG Industries, Inc: www.ppgideascales.com.
 - 5. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. Float Glass: Provide float glass based glazing unless noted otherwise.
 - 1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality-Q3.
 - 2. Heat-Strengthened and Fully Tempered Types: ASTM C1048, Kind HS and Kind FT.
 - 3. Tinted Types: ASTM C1036, Class 2 - Tinted, color and performance characteristics as indicated.
 - 4. Thicknesses: As indicated; for exterior glazing comply with requirements indicated for wind load design regardless of thickness indicated.
- C. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
 - 1. Laminated Safety Glass: Comply with 16 CFR 1201 test requirements for Category II.
 - 2. Plastic Interlayer:
 - 3. Manufacturers:
 - a. AGC Flat Glass North America, Inc: www.na.agc-flatglass.com.
 - b. Cardinal Glass Industries: www.cardinalcorp.com.
 - c. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: www.viracon.com.
 - d. Substitutions: Refer to Section 01 6000 - Product Requirements.

2.03 DECORATIVE PLASTIC FILMS

- A. Manufacturers:
 - 1. 3M Window Film: www.3m.com/US/arch_construct/scpd/windowfilm.
 - 2. Substitutions: Refer to Section 01 6000 - Product Requirements.
- B. Product: Fasara Privacy Glazing Film.

1. Pattern: Fine Crystal Decorative.
2. Properties:
 - a. General: Plastic finishes field-applied to glass material as visual opaque or decorative film.
 - b. Film: Polyester
 - c. Thickness: 3.2 mils.
 - d. Decorative Pattern: Printed.
 - e. Adhesive: Acrylic, Pressure Sensitive, Permanent.
 - f. Liner: Silicone-coated Polyester.
 - g. Fire Performance: Surface burning characteristics when tested in accordance with ASTM E84: Class A
 - 1) Flame Spread: 25 maximum.
 - 2) Smoke Developed: 450 maximum.

2.04 GLAZING ACCESSORIES

- A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; hardness range of 5 to 30 cured Shore A durometer; coiled on release paper; black color.
 1. Manufacturers:
 - a. Pecora Corporation: www.pecora.com.
 - b. Tremco Global Sealants: www.tremcosealants.com.
 - c. Substitutions: Refer to Section 01 6000 - Product Requirements.
- D. Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect an air barrier and vapor retarder seal.
 1. Manufacturers:
 - a. Pecora Corporation: www.pecora.com.
 - b. Saint-Gobain Performance Plastics: www.plastics.saint-gobain.com.
 - c. Substitutions: Refer to Section 01 6000 - Product Requirements.

2.05 SOURCE QUALITY CONTROL

- A. Provide shop inspection and testing for safety glass.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

- C. Prime surfaces scheduled to receive sealant.

3.03 GLAZING METHODS

3.04 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch intervals, 1/4 inch below sight line.
- E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

3.05 INSTALLATION - PLASTIC FILM

- A. Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.
- B. Place without air bubbles, creases or visible distortion.
- C. Fit tight to glass perimeter with razor cut edge.

3.06 FIELD QUALITY CONTROL

- A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
- B. Monitor and report installation procedures and unacceptable conditions.

3.07 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.08 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Gypsum wallboard.
- E. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- C. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2012.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.
- G. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.
- H. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- I. ASTM E413 - Classification for Rating Sound Insulation; 2016.
- J. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions, Indicated as Acoustic: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

2.02 METAL FRAMING MATERIALS

- A. Manufacturers - Metal Framing, Connectors, and Accessories:
 - 1. Clarkwestern Dietrich Building Systems LLC; www.clarkdietrich.com.
 - 2. Marino; www.marinoware.com.
 - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
 - 1. Studs: "C" shaped with flat or formed webs with knurled faces.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C-shaped.
 - 4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
- C. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
- D. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
 - 1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
 - 2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot dipped galvanized coating.

2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. American Gypsum Company; www.americangypsum.com.
 - 2. Georgia-Pacific Gypsum; www.gpgypsum.com.
 - 3. National Gypsum Company; www.nationalgypsum.com/#sle.
 - 4. USG Corporation; www.usg.com.
- B. Abuse Resistant Wallboard:
 - 1. Application: Ceiling and vertical surfaces..
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. Paper-Faced Type: Gypsum wallboard as defined in ASTM C1396/C1396M.
 - 4. Type: Fire resistance rated Type X, UL or WH listed.
 - 5. Thickness: 5/8 inch.
 - 6. Edges: Tapered.

2.04 ACCESSORIES

- A. Acoustic Insulation: As specified in Section 07 2100.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Ready-mixed vinyl-based joint compound.
- D. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
- E. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
 - 1. Level ceiling system to a tolerance of 1/1200.
- C. Studs: Space studs at 16 inches on center.
 - 1. Extend partition framing to structure in all locations.
 - 2. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:

1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
 2. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.07 TOLERANCES

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 09 2236

LATH

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal lath for cement and gypsum plaster.

1.02 RELATED REQUIREMENTS

- A. Section 09 2300 - Gypsum Plastering.
- B. Section 09 2405 - Stucco Repair

1.03 REFERENCE STANDARDS

- A. ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring; 2003 (Reapproved 2013).
- B. ASTM C847 - Standard Specification for Metal Lath; 2014a.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on furring and lathing components, structural characteristics, material limitations, and finish.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with at least three years of documented experience.

PART 2 PRODUCTS

2.01 LATH

- A. Diamond Mesh Metal Lath: ASTM C847, galvanized; self-furring.
 - 1. Weight: To suit application and as specified in ASTM C841 or ASTM C1063 for framing spacing.
- B. Beads, Screeds, Joint Accessories, and Other Trim: Depth governed by plaster thickness, and maximum possible lengths.

2.02 ACCESSORIES

- A. Anchorage: Tie wire, nails, and other metal supports, of type and size to suit application; to rigidly secure materials in place, galvanized.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that substrates are ready to receive work and conditions are suitable for application.
- C. Do not begin until unacceptable conditions have been corrected.

3.02 INSTALLATION - GENERAL

- A. Install interior lath and furring for gypsum plaster in accordance with ASTM C841.
- B. Install metal lath and furring for Portland cement plaster in accordance with ASTM C1063.

3.03 LATH INSTALLATION

- A. Continuously reinforce internal angles with corner mesh, except where the metal lath returns 3 inches from corner to form the angle reinforcement; fasten at perimeter edges only.
- B. Place corner bead at external wall corners; fasten at outer edges of lath only.
- C. Place base screeds at termination of plaster areas; secure rigidly in place.
- D. Place lath vertically above each top corner and each side of door frames to 6 inches above ceiling line.
- E. Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.
- F. Place additional strip mesh diagonally at corners of lathed openings. Secure rigidly in place.

3.04 TOLERANCES

- A. Maximum Variation from True Lines and Levels: 1/8 inch in 10 feet.
- B. Maximum Variation from True Position: 1/8 inch.

END OF SECTION

SECTION 09 2300
GYPSUM PLASTERING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum plaster over metal lath, masonry, and other solid surfaces.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- B. Section 09 2116 - Gypsum Board Assemblies: Metal stud framing and furring for plaster.
- C. Section 09 2236 - Lath: Metal lath, furring, and accessories for plaster base.

1.03 REFERENCE STANDARDS

- A. ASTM C28/C28M - Standard Specification for Gypsum Plasters; 2010 (Reapproved 2015).
- B. ASTM C631 - Standard Specification for Bonding Compounds for Interior Gypsum Plastering; 2009 (Reapproved 2014).
- C. ASTM C842 - Standard Specification for Application of Interior Gypsum Plaster; 2005 (Reapproved 2015).

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide data on plaster materials, characteristics, and limitations of products specified.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

PART 2 PRODUCTS

2.01 PLASTER MATERIALS

- A. Ready-Mixed Gypsum Plaster: ASTM C28/C28M; mill-mixed type, requiring only the addition of water. For application to monolithic concrete, provide bonding type.
- B. Ready-Mixed Finishing Plaster: Gypsum/Lime putty type, ASTM C28/C28M; mixture of gauging plaster and lime.
- C. Water: Clean, fresh, potable and free of mineral or organic matter that could adversely affect plaster.
- D. Bonding Agent: ASTM C631. Type recommended for bonding plaster to concrete and concrete block surfaces.

2.02 METAL LATH

- A. Metal Lath and Accessories: As specified in Section 09 2236.
- B. Beads, Screeds, and Joint Accessories: Zinc, as specified in Section 09 2236.

2.03 PLASTER MIXES

- A. Over Metal Lath: Three-coat application, ready-mixed plaster, mixed and proportioned in accordance with ASTM C842 and manufacturer's instructions.
- B. Ready-Mixed Plaster Materials: Mix in accordance with manufacturer's instructions.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing conditions are satisfactory before starting work.
- B. Masonry: Verify joints are cut flush and surface is ready to receive work of this section. Verify no bituminous or water repellent coatings exist on masonry surface.
- C. Grounds and Blocking: Verify items within walls for other sections of work have been installed.
- D. Metal Lath and Accessories: Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are in place.

3.02 PREPARATION

- A. Dampen masonry surfaces to reduce excessive suction.
- B. Clean concrete surfaces of foreign matter. Thoroughly dampen surfaces before using acid solutions, solvent, or detergents to perform cleaning. Wash surface with clean water.
- C. Roughen smooth concrete surfaces and smooth faced masonry.
- D. Apply bonding agent in accordance with manufacturer's instructions.

3.03 PLASTERING

- A. Apply gypsum plaster in accordance with ASTM C842 and manufacturer's instructions.
- B. Thickness of Plaster including Finish Coat:
 - 1. Over metal lath: 7/8 inch.
 - 2. Direct to unit masonry: 7/8 inch.
- C. Finish Texture: Match approved adjacent surface texture.

3.04 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 2405
STUCCO REPAIR

PART 1 GENERAL

1.01 SUMMARY

- A. Repair distress and construction deficiencies in portland cement-based plaster (stucco) walls.
- B. Repair nonstructural cracks in stucco brown coat and finish.
- C. Resurface wall to provide uniform appearance in accordance with owner's requirements.

1.02 SUBMITTALS

- A. Repair and coating manufacturers' specifications, details, installation instructions and product data.
- B. Samples for approval as directed by architect, engineer, or owner.
- C. Manufacturer's standard material warranty.
- D. A list of minimum three job references.

1.03 REFERENCES

- A. ASTM Standards
 - 1. ASTM C 926 Specification for Portland Cement Plaster
 - 2. ASTM C 1063 Specification of Installation of Lath and Furring to Received Portland Cement-based Plaster
 - 3. ASTM C 920 Specification for Elastomeric Joint Sealants
- B. Manufacturer's References
 - 1. Sto RC 100 reStore Guideline Cleaning Specification for Walls Surfaces
 - 2. Sto Stucco Repair and Maintenance Guide
 - 3. Sto S103 Sto Specification S 103 Sto Powerwall Stucco
- C. Other References
 - 1. Northwest Wall and Ceiling Bureau (NWCB) Portland Cement Plaster Resource Guide
 - 2. Sealant Waterproofing and Restoration Institute (SWRI) Validation Program for Wall Coatings (<http://www.swrionline.org/validation/>)

1.04 DESIGN REQUIREMENTS

- A. Provide crack repair detail for cracks not wider than 1/16-inch (1.6 mm) nominal width
- B. Provide crack repair detail for cracks wider than 1/16-inch (1.6 mm) but not wider than 1/8-inch (3.2 mm)
- C. Terminate stucco system using casing bead around perimeters of windows and doors. Provide minimum 1/2-inch-wide (12.5 mm) space between casing and window frame. Install sealant joint at perimeters of window, doors and mechanical penetrations.
- D. Indicate on the project drawings locations where resurfacing, refinishing, and/or recoating is required.
- E. Provide detail drawings consistent with manufacturer's guideline details and product installation instructions.
- F. Where lath is cut to facilitate repairs, wire-tie replacement lath to surrounding lath with 1/2-inch (12.5 mm) overlap.

1.05 QUALITY ASSURANCE

- A. Manufacturer's requirements
 - 1. Stucco and finish material manufacturer shall be experienced provider of cementitious and polymer-based materials for use in stucco construction and repair for minimum 25 years.
 - 2. Stucco and finish manufacturer shall have a manufacturing quality control system that is certified to comply with ISO 9001-2008 and an environmental quality management system certified to comply with ISO 14001-2004.
- B. Contractor requirements
 - 1. Contractor shall be licensed and insured and shall have been engaged in stucco and stucco repair construction for minimum three years.
 - 2. Contractor shall be knowledgeable in the proper handling, use and installation of Sto materials..
 - 3. Contractor shall employ skilled mechanics who are experienced and knowledgeable in the repair procedures and requirements of the specified project.
 - 4. Contractor shall have completed minimum three projects of similar size, scope and complexity to the project being specified.
 - 5. Contractor shall provide the proper equipment, manpower and supervision on the job site to perform the repair procedures in accordance with Sto's published repair specifications, applicable Sto details and the contract documents.
- C. Inspection requirements
 - 1. Quality control inspections shall be provided for by the manufacturer's representative.
 - 2. Inspectors shall be qualified by experience to evaluate field conditions before and during the repair process and shall be familiar with the specified repair procedures prior to commencement of work.
 - 3. Inspections shall be provided at key intervals during each repair.
 - 4. Inspect locations (for flashing repair and other locations where existing stucco must be removed) after demolition of the cementitious stucco is completed; before any existing flashing is removed; and before any new materials are installed. Verify that the proposed repair is constructible and will function in the manner intended based on the visible conditions. Resolve any visible construction detail conflicts with the repair designer before allowing the contractor to proceed with the repair.
 - 5. Inspect the condition of the water-resistive barrier and transition elements for visible evidence of material integrity and continuity of the system.
 - 6. Inspect the conditions of newly installed or replaced flashing, water-resistive barrier components and replacement lath (if applicable) before installing the replacement scratch coat. Verify that flashing and water-resistive barrier installation is in accordance with the repair detail design. Verify visible continuity of the water-resistive barrier system to direct water to the exterior of the wall via the flashing.
 - 7. Inspect the final appearance of each repair location to verify compliance with owner requirements.

1.06 MOCK-UP

- A. Construct 3 mock-ups of exterior ceiling, 4 feet long by 4 feet wide, illustrating surface finish and different substrate conditions.
- B. Locate where directed.
- C. Approved mock-up may remain as part of the Work.

1. Remove mock-ups not receiving Architect's approval.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in their original sealed containers bearing manufacturer's name and product identification.
- B. Protect liquid products (pails) from freezing and temperatures greater than 90 degrees F (32 degrees C). Do not store in direct sunlight.
- C. Protect portland cement based materials (bag products) from moisture and humidity. Store under cover and off of the ground in a dry location.

1.08 PROJECT/SITE CONDITIONS

- A. Apply materials only when surface and ambient temperatures are above 40 degrees F (4 degrees C) and are expected to remain above 40 degrees F (4 degrees C) for 24 hours after application.
- B. Provide supplementary heat for installation in temperatures less than 40 degrees F (4 degrees C).
- C. Provide protection of surrounding areas and adjacent surfaces from spillage, splatter, overspray or other unintended contact with the materials that are being applied.

1.09 COORDINATION AND SCHEDULING

- A. Schedule repairs to permit inspections where specified in Section 1.05.
- B. Do not start repairs in an area unless sufficient work can be completed such that the area is weather-tight at the end of the work shift. Alternatively allow sufficient time before the end of the work shift to provide weather protection until work can resume.
- C. Coordinate with all trades involved to schedule work to result in the proper sequencing of materials within the repair (proper lapping of water resistive system components and flashing).
- D. Schedule finish and coating application to large areas such that each day's application will end at an architectural break.

1.10 WARRANTY

- A. Provide manufacturer's standard warranty for products used.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide stucco, surface leveling, primer, waterproofing, and coatings (as applicable) from single manufacturer:
 1. Sto Corp., 3800 Camp Creek PKWY, Building 1400, Suite 120, Atlanta, GA 30331; www.stocorp.com, 1-800-221-2397
 2. Provide galvanized metal lath and stucco accessory components from qualified manufacturer.

2.02 SURFACE CONDITIONER

- A. Provide acrylic polymer surface conditioner for pretreatment of friable, chalking, or heavily weathered existing coating surfaces.
 1. Product: Sto Plex W - acrylic surface conditioner for preparation existing painted or finished surfaces that exhibit chalking or are heavily weathered.

2.03 GLASS FIBER MESH REINFORCEMENT

- A. Provide alkali resistant, open weave glass fiber mesh reinforcing for surface leveling and waterproof base coat.
 - 1. Products:
 - a. Sto Detail Mesh - alkali-resistant, glass-fiber reinforcing mesh for use with Sto base coat products to provide crack resistance.

2.04 ACRYLIC CRACK FILLER

- A. Provide acrylic crack filler.
 - 1. Products:
 - a. Sto Flexible Crack Filler - acrylic-based crack filler packaged in sealant tube for use (unreinforced) in repair of cracks not wider than 1/16-inch (1.6 mm) and up to 1/8-inch (3.2 mm) wide with mesh reinforcement.

2.05 LEVELER/BASE COAT/SKIM COAT

- A. Provide high-build polymer-modified portland cement-based base coat for surface leveling over cementitious finishes and brown coat.
 - 1. Products:
 - a. Sto BTS Xtra - lightweight polymer-modified cementitious base coat used with or without mesh reinforcement to smooth and fill existing textured surfaces or to correct planar irregularities up to 1/4-inch (6.4 mm).

2.06 PORTLAND CEMENT PLASTER

- A. Provide portland cement stucco scratch and brown coat.
 - 1. Products:
 - a. StoPowerwall Stucco Pre-Blended (80102) - factory proportioned portland cement-based stucco combined with water in the field.

2.07 PRIMER

- A. Provide pH resistant acrylic primer to be used on stucco brown coat.
 - 1. Product: Sto Hot Prime (fresh stucco)
 - 2. Product: StoPrime Sand (existing stucco and painted surfaces)

2.08 ARCHITECTURAL COATING

- A. Provide architectural coating to provide uniform appearance to repaired walls.
 - 1. Acrylic Coating Products:
 - a. StoCoat Acryl Plus - smooth acrylic premium horizontal or vertical grade architectural coating

2.09 MIXING

- A. Mix in accordance with manufacturer's printed instructions.
- B. Mix cementitious products with clean, potable water.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Inspect locations identified on the project drawings for repair.
- B. Establish clear understanding of the repair scope and process with the mechanics that will perform the work for each individual location.

3.02 SELECTIVE DEMOLITION

- A. Use hearing, eye, ear and respiratory personal protective equipment when performing demolition.
- B. Provide adequate protection to persons and property from potential falling debris from demolition and repair construction.
- C. Stucco Removal:
 - 1. Saw cut perimeter of repair area with a masonry blade set to a depth that will not cut into the sheathing.
 - 2. Chip stucco at the edges of the saw cut to provide a minimum ½-inch perimeter of exposed lath where lath is to be repaired or replaced.
 - 3. Remove stucco such that patches will be square or rectangular shaped. Avoid re-entrant corners within patches and constructing patches with greater than 2.5: 1 length-to-width ratios.
- D. Finish removal:
 - 1. Finish removal shall be by sandblasting, grinding and scraping.
 - 2. Remove finish where required to cosmetically match finish texture with surrounding unaltered stucco.
 - 3. Finish shall be removed minimum 1-inch (25mm) around the perimeter of saw-cut or chipped areas, and on both sides of cracks to be repaired using crack-filling and bridging techniques.

3.03 REPAIR OF CRACKS 1/16-INCH (1.6 MM) WIDE AND SMALLER

- A. Cracks not wider than 1/32-inch (0.8 mm) (hairline cracks).
 - 1. Clean existing surface in accordance with Sto reStore Cleaning Specification RC100
 - 2. Provide coating as specified in Article 3.08.
 - 3. Apply new finish to match surrounding texture and color.
- 4. Cracks not wider than 1/16-inch (1.6 mm)
 - a. Remove finish along crack as specified in section 3.02.C.
 - b. Clean crack using oil-free compressed air.
 - c. Seal crack with flexible crack filler and tool surface flush with brown coat.
 - d. Provide coating as specified in Article 3.08.
 - e. Apply new finish to match surrounding texture and color.

3.04 REPAIR OF CRACKS 1/16-INCH (1.5MM) WIDE TO MAXIMUM 1/8-INCH (3.2MM) WIDE

- A. Remove finish along crack as specified in section 3.02.C.
- B. Clean crack using oil-free compressed air.
- C. Fill crack with Sto Flexible Crack Filler and tool surface flush.
- D. Apply skim coat material along both sides of crack and tool flat. Embed 2-inch wide (50 mm) strip detail mesh generally centered on crack and tool into fresh Sto skim coat material using taping knife. Tool smooth to the thickness required to fully embed the mesh (approximately 1/16-inch (1.6 mm) thick). Allow skim coat to dry completely before applying finish.
- E. Provide coating as specified in Article 3.08.
- F. Apply new finish to match surrounding texture and color.

3.05 SURFACE DEFECT REPAIR

- A. Localized finish repair

1. Remove affected finish in accordance with section 3.02.C of this specification.
 2. Clean exposed brown coat surface to remove all dust, dirt, and other bond-inhibiting materials.
 3. Apply primer in accordance with written product instructions.
 4. Apply finish to match surrounding stucco texture and color.
- B. Localized brown coat repair within field of wall.
1. Remove stucco in accordance with section 3.02 of this specification.
 2. Remove stucco minimum 2-inch (50 mm) in all directions beyond area of concern where lath replacement is required.
 3. Remove and replace damaged or corroded lath.
 - a. Remove damaged lath minimum 1-inch (25 mm) in all directions beyond area of concern.
 - b. If existing, repair water-resistive barrier system as necessary to correct any damage that is either existing or caused by stucco and lath removal actions.
 - c. Cut replacement lath to provide minimum 1/2-inch (12.5 mm) overlap on all sides.
 - d. Wire tie new lath to existing lath at maximum spacing of 8-inches (203 mm).
 - e. Provide minimum 4 wire ties for small lath replacements.
 4. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
 5. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with appropriate primer prior to finish application.
 6. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.
- C. Remedial accessory installation
1. Remove stucco in accordance with section 3.02 of this specification.
 2. Remove stucco a sufficient distance from accessory to permit removal of the existing accessory and wire-tie connection of new accessory.
 3. Remove and replaced damaged accessories
 - a. Cut damaged section of existing accessory and remove from wall.
 - b. Repair water-resistive barrier system if damage is present or occurs as a result of the accessory removal.
 - c. Wire tie new accessory to existing lath at maximum spacing of 8-inches (203 mm).
 - d. Provide minimum 4 wire ties for small lengths of replacement.
 4. Align new sections of corner and casing beads carefully to match adjacent accessories.
 5. Set both ends of all accessory replacements pieces in wet sealant. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
 6. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with appropriate primer prior to finish application.
 7. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.
- D. New accessory installation
1. Remove stucco in accordance with section 3.02 of this specification in locations where required accessories are not present.

2. Install new corner beads, casing beads, weep screeds or other accessories in accordance with ASTM C 1063.
3. Set ends of accessories in wet sealant.
4. Mix and apply stucco scratch and brown coats in accordance with ASTM C 926 to match existing stucco thickness. Cover with polyethylene sheeting or otherwise moist-cure for minimum 48-hours.
5. Where finish is specified directly to new stucco, prime the new stucco brown coat surfaces with appropriate primer prior to finish application.
6. Where further surface leveling or surface applied waterproofing is specified, apply leveler or waterproof base coat after completion of the 48-hour cure period.

3.06 SURFACE SKIM COAT

A. Surface leveling

1. Apply unreinforced polymer modified cementitious leveling coat to correct for profile variations of 1/8-inch (3.2 mm) to 1/4-inch (6.4 mm).
 - a. Sto BTS Xtra: Mix and apply in accordance with manufacturer's written instructions.
2. Apply unreinforced skim coat to existing finish surfaces to level surface in preparation for new finish application.
 - a. Sto BTS Xtra
 - 1) Apply Sto BTS Xtra over textured cementitious finish and pull tight to fill low areas in finish and provide flat surface to receive new textured finish.
 - 2) Allow Sto BTS Xtra to fully dry before applying finish.

B. Skim Coat for Crack remediation

1. Apply glass-fiber mesh reinforced base coat to remediate frequent fine cracks (less than 1/16-inch (1.6 mm) wide) and provided additional crack prevention.
2. Sto BTS Xtra
 - a. Apply Sto BTS Xtra over prepared cementitious base coat and cementitious finish surfaces by trowel to a nominal thickness of 1/16-inch (1.6 mm).
 - b. Use trowel to fully embed Sto Mesh in the freshly applied Sto BTS Xtra skim coat. Overlap runs of mesh minimum 2 1/2-inches (62.5 mm).
 - c. Allow Sto BTS Xtra to fully dry before applying finish.

3.07 FINISH

- #### A. Apply Sto finish in accordance with manufacturer's written instructions for the specified product.

3.08 COATING

- #### A. Prepare surface to receive finish coating in accordance with manufacturer's cleaning specification:
1. Sto reStore RC100.
- #### B. Apply finish coating in accordance with manufacturer's written instructions for the specified product.

END OF SECTION

SECTION 13 4800
EXTERIOR ACOUSTIC WALL PANEL SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Insulated, double-wall acoustic barrier wall panel system..

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete foundations.

1.03 PRICE AND PAYMENT PROCEDURES

- A. Alternates: See Section 01 2300 - Alternates, for alternatives affecting this section.

1.04 REFERENCE STANDARDS

- A. ASTM E90: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- B. ASTM C423: Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- C. ASTM A653/A653M: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy- Coated (Galvannealed) by the Hot-Dip Process

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate the installation of acoustic barrier wall panel system with size, location and installation of existing service utilities.
- B. Preinstallation Meeting: Conduct a preinstallation meeting two weeks prior to the start of the work of this section; require attendance by all affected trades.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data:
 - 1. Submit product data for products and systems specified in this Section.
 - 2. Provide certified independent test data indicating sound absorption and transmission loss characteristics of the panel assembly. Test data must be obtained through independent tests conducted in a NVLAP accredited laboratory in accordance with ASTM E90 and ASTM C423.
- C. Shop Drawings:
 - 1. Include plans, elevations and details.
 - 2. Provide and note reaction forces at each column base plate.
 - 3. Include piece-marked installation drawings, sequencing and special instructions.
- D. Certificate: Certify that products of this section meet or exceed specified requirements.
- E. Delegated Design:
 - 1. Provide a copy of structural calculations with barrier wall system submittal drawings to be used by the engineer of record for designing the foundation and foundation anchors.
 - 2. Structural calculations and shop drawings shall be signed and sealed by an Engineer licensed in the State of Delaware.
- F. Manufacturer shall provide a copy of structural calculations with barrier wall system submittal drawings to be used by the engineer of record for designing the foundation and foundation anchors.

1. Special external panel loading conditions, including wind, snow, and equipment shall be provided as per specifications.
- G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.07 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer shall have produced a standard factory fabricated, modular panel system and components for at least 10 years.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver, and store in accordance with manufacturer's requirements
- B. Accept delivery on site in manufacturer's packaging and inspect for damage.
- C. Protect material from damage during construction.

1.09 WARRANTY

- A. See section 01 7800 - Closeout Submittals for additional warranty requirements.

PART 2 MATERIALS

2.01 MANUFACTURERS

- A. NOISEBLOCK™ by Kinetics Noise Control, Inc.: www.kineticsnoise.com
- B. Substitutions: See Section 01 6000 - Product Requirements

2.02 ACOUSTICAL METAL PANELS

- A. Barrier panels and their components shall be factory fabricated, sectional, and metal-clad modular designed for easy and accurate field assembly. The panels and components shall not be susceptible to damage due to extended exposure to vibration, air temperature or humidity with the passage of time.

2.03 DESIGN CRITERIA

- A. Acoustical Performance
 1. Panels shall exhibit a minimum STC 40 and NRC 1.0

2.04 PANEL CONSTRUCTION

- A. Panels shall be (4) inches thick, with a solid exterior shell and a perforated interior shell; material to be galvanized steel, Type G90.
- B. The panel shells, framing members, and internal reinforcements shall be spot welded together to form a metal-sheathed panel of sufficient strength for maximum operating loads. specified in the structural performance section of these specifications.
- C. The outer galvanized steel shell thickness shall be 16 ga. minimum and the inner galvanized steel shell shall be 22-gauge minimum thickness.
- D. Where perforated materials are indicated, all perforations shall be 1/8" dia. holes on 3/32" staggered centers and shall result in an open area of no less than 23 percent.
- E. All panel internal reinforcing members shall be minimum 18 ga. galvanized steel, type G90.
- F. Each panel shall be filled with sound absorbing materials that are inert, mildew-resistant, vermin proof, and incombustible and inherently suitable for wet/dry, freeze/thaw cycles. Use of a moisture barrier is not permitted.

2.05 PANEL COMPONENTS

- A. All accessory trim items shall be of 18 ga. minimum galvanized steel, type G90 and shall be furnished in factory standard lengths to be field cut to specified dimensions. Location and quantity of sheet metal screws and trim requirements shall be in accordance with the barrier wall system manufacturer's installation details.
- B. All external panel connections, trim items, accessories, panel interfaces and other sections as noted on the drawings.

2.06 STRUCTURAL MEMBERS

- A. The structural members shall be designed as a field bolt-together system. All holes in column webs, backer angles and base plates shall be factory drilled. All nuts, bolts and washers to be supplied by barrier wall system manufacturer. Field welding of structural components is not permitted.
- B. Columns and base plates shall be supplied as factory-welded assemblies by the Manufacturer.
- C. Under the indicated loading conditions, the entire barrier panel system shall be self-supporting. The installer shall erect all structural members in strict accordance with the manufacturer's piece-marked installation drawings and details.
- D. Under the above loading conditions, the assembled acoustical structure shall not exhibit any panel joint deflection in excess of $L/240$, where L is the unsupported span length of any panel section in the erected structure.

PART 3 EXECUTION.

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify existing underground services and conditions prior to layout and shop drawings.

3.02 FOUNDATIONS

- A. Engineer of Record shall confirm foundation design upon receipt of the following:
 - 1. Barrier Wall System Calculations and base plane reactions provided by manufacturer.
 - 2. Layout including underground systems and conditions.

3.03 ERECTION - BARRIER WALL PANEL SYSTEM

- A. Install in accordance with manufacturer's instructions.
- B. Fasten panel system to structural supports, aligned level and plumb.
- C. Use concealed fasteners.

END OF SECTION

SECTION 32 1413
SAND-SET PRECAST CONCRETE PAVING UNITS

PART 1 - GENERAL

1.01 SUMMARY

- A. Perform all work required for a complete system, as indicated by the Contract Documents. Furnish all items necessary for the proper installation of the system.
- B. System shall consist of precast concrete Large Scale Paving Units, for sand-set pedestrian use installation.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - 1. ASTM C33 Concrete Aggregates
 - 2. ASTM C39 Concrete Compressive Strength
 - 3. ASTM C144 Aggregate for Masonry Mortar
 - 4. ASTM C150 Portland cement
 - 5. ASTM C642 Water Absorption, Density, Voids in Hardened Conc
 - 6. ASTM C666 Rapid Freeze/Thaw Resistance of Conc
 - 7. ASTM C979 Pigments for Integrally Colored Concrete
 - 8. ASTM C1028 Coefficient of Friction

1.03 SUBMITTALS

- A. Samples: Submit two full-sized samples of each type of precast concrete paving units to show the full range of color and texture of unit for selection and approval. If sealer is to be applied to precast concrete paving slab, apply sealer on one sample.
- B. Warranty: Provide certified copies of manufacturer's product warranties.
- C. Shop drawings:
 - 1. Layout drawings showing pattern of pavers for each paved area, indicate pavers requiring cutting, indicate setting bed methods in each area, and indicate drainage. Include details of setting beds. Indicate details at curbs and vertical surfaces as applicable.

1.04 MOCK-UP

- A. Install a 6 ft x 10 ft minimum paver area as described in Article 3.2. Mock-up area to be used to determine joint sizes, lines, laying pattern, color(s) and texture of the job. Mock-up area to be the standard from which the work will be judged. Consideration will be given with regard to differences in age of materials from time of mock-up construction to the time of actual product delivery and installation.

1.05 SUBSTITUTIONS

- A. Substitutions: See Section 01 6000 - Product Requirements.

1.06 QUALITY ASSURANCE

- A. Compliance with Regulations: Comply with requirements of state and local building codes and with rules and regulations relating to building accessibility.
- B. Qualifications of Manufacturer
 - 1. Company specializing in manufacture of precast concrete paving units with a minimum of 10 continuous years of documented experience.
 - 2. Must have a minimum of 5 years of documented experience manufacturing large-scale segmental paving units.

- C. Qualifications of Subcontractor: Subcontractor shall submit evidence of skill and not less than 5 years of experience in this product type.
- D. Pre-installation Conference: As directed by the Architect
- E. Precast concrete paving units shall have a compressive strength of 5,000 psi minimum.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials to the installation site in the manufacturer's original packaging. Packaging shall contain manufacturer's name, customer name, order, identification number, and other related information.
- B. Handle and store precast concrete paving units in accordance with manufacturer's recommendations.

1.08 WARRANTY

- A. Provide warranty covering precast concrete paving units against defects in material and workmanship for a period of 5 years. Unusual abuse and neglect are excepted.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Stepstone, Inc.
17025 South Main Street
Gardena, CA 90248
(310) 327-7474
(800) 572-9029
FAX (310) 217-1424
www.stepstoneinc.com <<http://www.stepstoneinc.com>>

2.02 MATERIALS

2.03

- A. Precast concrete paving units shall be precast concrete Large Scale CalArc Pavers, consisting of Portland cement, aggregate, and color admixtures.
 - 1. Portland Cement: ASTM C 150, Type III, high early strength.
 - 2. Aggregate: ASTM C 33.
 - 3. Color Admixture: By Davis Colors, or equal, as required to achieve color as selected.
 - 4. Aggregate for exposed aggregate surface: As selected.
- B. Precast Concrete Paving Unit style
 - 1. Large Scale CalArc Pavers - 2-1/2" thick
 - 2. Pavers shall have radius top edge to reduce chipping.
 - 3. Pavers have drafted sides

2.04 COLORS AND FINISHES

- A. Colors:
 - 1. Integral color shall be throughout entire product. Finish color shall not be added as a face mix.
 - 2. Selected from manufactures standard colors.
 - 3. Minimum of four colors

2.05 FINISH: .

- A. All Finishes shall be sandblasted.
- B. Walking surfaces shall have a minimum coefficient of friction of 0.60, wet and dry.
- C. Factory Application of Sealer: Factory apply one coat of penetrating sealer to all surfaces of paving units. Sealer shall be non-staining, penetrating material, suitable for exterior or interior use, type which does not discolor or darken the surface.

2.06 PHYSICAL PROPERTIES

- A. Compressive strength: Minimum 5,000 psi.
- B. Size and Finish Schedule

Size	Sandblast	Exposed Aggregate
5-7/8" x 11-7/8" x 2-1/2"	X	X
5-7/8" x 47-7/8" x 2-1/2"	X	X
11-7/8" x 47-7/8" x 2-1/2"	X	X

- C. Unit size: Within 1/8" of designated length, width and thickness.
- D. Weight: Large Scale CalArc Paver: 2-1/2" thick -28 pounds per square foot.
- E. Water absorption: Not more than 6.0 % average, not more than 7.0 % for any individual unit for standard colors.
- F. Large Scale CalArc Pavers will contain on average 5% entrained air, with no individual piece under 4%.
- G. Resistance to Freeze-Thaw: Large Scale CalArc Pavers will resist 300 freeze thaw cycles in accordance with ASTM C666 Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

2.07 FABRICATION

- A. Large Scale CalArc Pavers shall be fabricated of cement conforming to ASTM C 150, Type III, aggregates conforming to ASTM C 33, and pigments for integrally colored concrete conforming to ASTM C979.

2.08 SOURCE QUALITY CONTROL

- A. Concrete for Large Scale CalArc Pavers shall be tested frequently to assure that mixes provide units having not less than 5,000 psi compressive strength at 28 days (average test strength not less than 4,500 psi).
- B. Minor chips, hairline cracks, air voids and slight variations in color are normal in precast concrete. When viewed in typical daylight illumination from a distance of 20 feet, minor chips, hairline cracks and air voids that cannot be seen with the naked eye are not grounds for rejection.

2.09 ACCESSORIES

- A. Perimeter Edge:
 - 1. Provide continuous aluminum perimeter edge between planting beds and pavers.
 - a. Manufacturer: Permaloc (www.permaloc.com) - StructurEdge.

2. Provide continuous compressible fill with sealant along pavers and vertical surface (i.e. existing building and built-in benches).
 - a. Manufacturer: W.R. Meadows (www.wrmeadows.com) - Ceramar flexible foam expansion joint.
 - b. Manufacturer: W.R. Meadows (www.wrmeadows.com) - Pourthane NS non-sag polyurethane joint sealant.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Contractor shall certify that sub-grade preparation, compacted density and elevations conform to the specifications. Compaction of the soil sub-grade to at least 98% Standard Proctor Density per ASTM D 698 is recommended. Stabilization of the sub-grade and/or base may be necessary with weak or saturated sub-grade soils. The Contractor and/or Architect/Engineer should inspect sub-grade preparation, elevations and conduct density tests for conformance to specifications.
 1. Compaction of the soil sub-grade to at least 98% Standard Proctor Density per ASTM D 698 is recommended.
 2. Stabilization of the sub-grade and base may be necessary with weak or saturated sub-grade soils.
 3. The Contractor shall inspect sub-grade preparation, elevations and conduct density tests for conformance to specifications.
- B. Contractor shall verify that geotextiles, if applicable, have been placed according to specifications.
- C. Contractor shall verify that aggregate base materials, thickness, compaction, surface tolerances, and elevations conform to the specifications.
- D. Contractor shall verify location, type, installation and elevations of edge restraints around perimeter of area to be paved. Perimeter containment must surround the entire paving area.
- E. Contractor shall verify base is dry, uniform, even and ready to support sand, precast concrete paving units, and imposed loads.
- F. Installing the bedding sand and precast concrete paving unit installation constitutes acceptance of base and edge restraint installation.

3.02 INSTALLATION - GENERAL:

- A. Installation shall comply with requirements of applicable building codes and state and local jurisdictions.
- B. Spread the bedding sand evenly over the base course and screed to a nominal 1" thickness. Do not exceed 1-1/4" thickness.
- C. For Large Scale Paver sizes other than 5-7/8 inch wide: Lay the precast concrete paving units on top of screeded sand in the pattern as defined on the drawings. Maintain straight pattern lines.
 1. Check sand bed for deviations in elevation that exceed +/- 3/8" over a 10 foot straightedge. If there are any deviations that exceed this then the elevations shall be corrected with more base material, not more bedding sand.
 2. Use low amplitude, high frequency plate vibrator to compact the pavers into the sand bed. CalArc pavers to be covered with an isolation layer, for example plywood sheets (minimum of 7/16 inch thick), to protect against surface scratching and evenly distribute the impact load during compaction. Other isolation techniques, such as a roller attachment

or a dense polyurethane sheet covering the entire plate may be used, if they protect the CalArc paver surface and avoid compactor impact from cracking the CalArc pavers.

- D. For 5-7/8 inch wide Large Scale Pavers: Use low amplitude, high frequency plate vibrator to compact the sand bed.
 - 1. After compacting the sand bed, check bed for deviations in elevation that exceed $\pm 3/8$ " over a 10 foot straightedge. If there are deviations that exceed this then the elevations should be corrected with more base material, not with more bedding sand.
 - 2. After compacting the sand bed, rake the compacted surface and re-screed the raked sand before installing the pavers.
 - 3. Lay the precast concrete paving units, on top of the re-screeded sand in the pattern as defined on the drawings. Maintain straight pattern lines.
- E. Typical joints between the pavers at the top of paving surface shall be roughly $3/16$ " to $1/4$ " wide. Refer to Section 2.4.C for standard dimensional paver tolerances. (Note: Recommended minimum spacing at bottom of pavers is $1/16$ ".")
- F. Fill gaps at edges of the paved area with cut precast concrete paving units
- G. Fill joints with sand.
 - 1. Joint sand to meet specifications ASTM C 144 mixed with joint sand stabilizer per manufacturer's recommendations.

3.03 CLEANING:

- A. Clean exposed surfaces of precast concrete paving units. Use cleaners appropriate for precast concrete finishes and colors. Acid based cleaners will alter finish and color.

3.04 COMPLETION:

- A. Protect precast concrete paving units from damage due to subsequent building operations.
- B. After installation and before completion, inspect precast concrete paving units for construction damage and obtain new precast concrete paving units if required.
- C. Immediately prior to final acceptance of project, clean precast concrete paving units.

END OF SECTION

SECTION 32 3113
CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Posts, rails, and frames.
- B. Wire fabric.
- C. Manual gates and related hardware.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete anchorage for posts.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
- C. ASTM A392 - Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric; 2011a (Reapproved 2017).
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2017.
- E. ASTM F567 - Standard Practice for Installation of Chain-Link Fence; 2014a.
- F. CLFMI CLF-SFR0111 - Security Fencing Recommendations; 2014.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on fabric, posts, accessories, fittings and hardware.
- C. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components. See CLFMI CLF-SFR0111 for planning and design recommendations.
- D. Manufacturer's Installation Instructions: Indicate installation requirements, post foundation anchor bolt templates.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Fence Installer: Company with demonstrated successful experience installing similar projects and products, with not less than five years of documented experience.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Posts, Rails, and Frames:
 - 1. Formed from hot-dipped galvanized steel sheet, ASTM A653/A653M, HSLAS, Grade 50, with G90 (Z275) zinc coating.
 - 2. Line Posts: Type I round.
 - 3. Terminal, Corner, Rail, Brace, and Gate Posts: Type I round.
- B. Wire Fabric:
 - 1. ASTM A392 zinc coated steel chain link fabric.

2.02 COMPONENTS

- A. Line Posts: 1.9 inch diameter.
- B. Corner and Terminal Posts: 2.38 inch diameter.
- C. Gate Posts: 3.5 inch diameter.
- D. Top and Brace Rail: 1.66 inch diameter, plain end, sleeve coupled.
- E. Gate Frame: 1.66 inch diameter for welded fabrication.
- F. Fabric: 2 inch diamond mesh interwoven wire, 6 gage, 0.1620 inch thick, top selvage knuckle end closed, bottom selvage twisted tight.

2.03 MANUAL GATES AND RELATED HARDWARE

- A. Hardware for Double Swinging Gates: 180 degree hinges, 2 for gates up to 60 inches high, 3 for taller gates; drop bolt on inactive leaf engaging socket stop set in concrete, active leaf latched to inactive leaf preventing raising of drop bolt, padlock hasp; keepers to hold gate in fully open position.

2.04 ACCESSORIES

- A. Caps: Cast steel galvanized; sized to post diameter, set screw retainer.
- B. Fittings: Sleeves, bands, clips, rail ends, tension bars, fasteners and fittings; steel.

2.05 FINISHES

- A. Components (Other than Fabric): Galvanized in accordance with ASTM A123/A123M, at 1.7 oz/sq ft.
- B. Hardware: Hot-dip galvanized to weight required by ASTM A153/A153M.
- C. Accessories: Same finish as framing.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify that areas are clear of obstructions or debris and underground services.

3.02 INSTALLATION

- A. Install framework, fabric, accessories and gates in accordance with ASTM F567.
- B. Place fabric on outside of posts and rails.
- C. Line Post Footing Depth Below Finish Grade: ASTM F567.
- D. Corner, Gate and Terminal Post Footing Depth Below Finish Grade: ASTM F567.

- E. Brace each gate and corner post to adjacent line post with horizontal center brace rail. Install brace rail one bay from end and gate posts.
- F. Provide top rail through line post tops and splice with 6 inch long rail sleeves.
- G. Provide concrete center drop to footing depth and drop rod retainers at center of double gate openings.

3.03 TOLERANCES

- A. Maximum Variation From Plumb: 1/4 inch.
- B. Maximum Offset From True Position: 1 inch.

3.04 FIELD QUALITY CONTROL

- A. Layout: Verify that fence installation markings are accurate to design, paying attention to gate locations, underground utilities, and property lines.
- B. Gates: Inspect for level, plumb, and alignment.

END OF SECTION